



THE FORT MOJAVE CULTURAL RESOURCE INVENTORY,
AN ARCHAEOLOGICAL/HISTORICAL FIELD INVESTIGATION
IN SOUTHERN CLARK COUNTY, NEVADA
SECOND PHASE

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INTRODUCTION

In August, 1976, the then Nevada Archaeological Survey, Southern Division (since July 1, 1977 the Archaeological Research Center of the UNLV Museum of Natural History), University of Nevada, Las Vegas (UNLV), submitted a report prepared for the Bureau of Land Management (BLM) on archaeological field investigations in the southernmost part of Clark County, Nevada. This work was done under BLM P.O. #YA-510-PH6-107 and the report is entitled "The Fort Mojave Cultural Resource Inventory, An Archaeological/Historical Field Investigation in Southern Clark County, Nevada". This project inventoried approximately seven square miles or about 30 quarter sections, which was about one-half of the total BLM land in the Fort Mojave resource area. The Fort Mojave area is located in the southeastern tip of Clark County, Nevada, and portions of the survey area abut against the western bank of the Colorado River. The locale is opposite the southern portion of Bullhead City, Arizona, in the section called "Big Bend".

In June, 1977, the Archaeological Research Center (ARC) received a request from Robert York, Archaeologist for the Division of Resources, Nevada State Office of the BLM, to complete a second phase of the inventory of the Fort Mojave area. This was to include the quarter sections unsurveyed during the first investigation of Fort Mojave, and amounted to approximately five and a half square miles. This second survey was to complete the archaeological inventory of the Fort Mojave area for the BLM. In the quarter sections adjacent to those where no

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cultural resources were encountered during the first survey, a spot check type of investigation was to be conducted, and in those quarter sections adjacent to cultural resources recorded during the first survey, a more intensive investigation was to be done. The flood plain on the western banks of the Colorado River, which is heavily covered with vegetation, as described in the first report, was not to be included during this second survey to complete the Fort Mojave cultural resource inventory. In addition lands adjacent to the Fort Mojave survey area, where it was necessary to determine the boundaries of a site local were to be included as needed.

A budget estimate was sent to the Nevada State Office of the BLM for the approximate cost of conducting this proposed second phase of the investigation. On July 27, 1977, P.O. #NV950-PH7-2444 was received with the BLM authorization to carry out this proposed project.

This cultural resource investigation was conducted by staff members of the ARC, working under the supervision of Dr. Richard H. Brooks, project director. The field staff consisted of Joseph King, David Ferraro, Matt McMackin, Sheilagh Brooks and R.H. Brooks. Cary Stevens is the ARC staff photographer and Kathryne Olson, the laboratory analyst. Twenty-five man days were spent in the field during this survey over a period of five days. Less field time was necessary for this second inventory as all the access roads were known, the section markers had already been located previously, access to the quarter sections to be surveyed was familiar and the flood plain quarter sections did not have to be

surveyed. These latter had involved time and effort during the first survey related to the heavy growth of vegetation, particularly mesquite and tamarisk. Fewer sites were encountered during this second survey, which reduced the field time necessary for recording the data, and has also reduced the amount of laboratory time as fewer artifacts were recovered. Laboratory and report time has amounted to approximately 10 man days.

Contact was maintained during this survey with R. York in Reno and Stanton D. Rolf, Archaeologist for the Las Vegas District Office of the BLM. Through the Las Vegas District Office maps and flagging for the site locales was provided during this inventory.

This project is a cultural resource inventory and is not designed to include intensive historical, ethnological, climatic or comparative archaeological research. Previous archaeological surveys conducted by the ARC staff are utilized to supplement the field observations of the geology, topography and biotic communities, in addition the first inventory in the Fort Mojave area provided essential data with regard to the locations of potential site areas. The BLM final Environmental Statement (1975) for the project area has also assisted in the provision of background data and maps of the locale.

Authority for archaeological survey in the State of Nevada has been granted to Dr. Richard H. Brooks through a Nevada State Antiquity Permit from the Nevada State Museum, and, through the Antiquities Act of 1906, by a Department of Interior Antiquity Permit, Number 77-NV-096, August 11, 1977, through August 10, 1980.

Since this second phase of the inventory project is constructed

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as a separate investigation with an individual report on the Fort Mojave area, the background information regarding archaeological site data review has been expanded with a historical resume of archaeological research associated with the building of Davis Dam, and subsequent National Park Service or Bureau of Reclamation archaeological surveys. In addition an ethnological overview is included of the Mojave Indians by David Rupert, as well as recently obtained information on the history of the area, based on the research of Dennis Casebier, and of Phillip Earl.

ARCHAEOLOGICAL SITE DATA REVIEW

This section consists of an archaeological resume of research along the Colorado River south of Hoover Dam and north of Parker Dam*.

Based on Harrington's 1936 report the first professional archaeological research in the new Lake Mohave region apparently began sometime in 1935. Willow Beach, or Pebble Beach as it was called originally, is located approximately nine miles downstream from the present site of Hoover Dam. The site is on the Arizona side of the Colorado River, about one-quarter of a mile upstream from the mouth of Jumbo Wash where the present marina and concessions are situated. Harrington reported this site as being on a narrow terrace about 30 feet above the water level of the Colorado River as it was prior to the construction of Davis Dam. "Here Indian pottery and stone implements have been washed out by spring floods for some years, and here, in the face of the cut bank, beds of ashes and charcoal could be scattered from the surface to a depth of about nine feet with layers of sand and silt between. It was evidently a camp-site occupied at frequent intervals for many centuries" (Harrington, 1936:5). The excavation of the site at Willow Beach was supported by the Works Progress Administration (WPA) and through

*This resume section is taken from a manuscript prepared by Brooks et al (1977) for the National Park Service, as part of a Lake Mead National Recreation Area overview, and is on file at the Western Regional Office of NPS, Tucson, Arizona.

this agency CCC enrollees were provided. The work at the site was under the direction of Harrington's junior foreman, Willis Evans. The excavation was conducted sporadically over a two month period, with a crew of 18 to 20 men.

An area within the site 40' long, 38' wide, with a maximum depth of 9'6" was dug with trowels and shovels. The use of trowels was considered necessary in certain areas "as specimens are likely to appear anywhere in the whole nine feet of depth except for one barren stratum of varying thickness just below the middle of the deposit" (Harrington, 1936:5). The excavation produced numerous artifacts and:

"the very surface yields arrowpoints and other articles of comparatively recent Paiute Indian make; directly below these are found Early Pueblo arrowpoints and pottery fragments down to a depth of about four feet. Beneath this Pueblo level comes the barren stratum above mentioned...and beneath this again a succession of ash layers which yield numerous worked flints and the split bones of food animals, but no pottery at all. Some very fine spear heads and dart points were found here, resembling in a general way the forms identified with the old Basketmaker II period; there are also some snub-nosed scrapers, which in Nevada seem to be associated only with the older peoples. Among the animal bones found in these deposits are bones of the elk which could not live in the Boulder Dam district at present on account of the arid climate conditions; consequently these older terrace deposits must have been laid down when the climate of southern Nevada was considerably moister than at present.

Three human burials have been found thus far at the Pebble Beach site, all, apparently belonging to the Early Pueblo period. One was covered with large shell beads and was accompanied by Pueblo pottery and arrowpoints. There was also one dog burial found here" (Harrington, 1936:5-6).

Harrington estimated at the time he was there that about one-third or one-fourth of the total deposit of the Willow Beach site had been excavated and recommended additional research of this site, which he considered to be extremely important.

No further published archaeological research was conducted in the area between Hoover Dam and the site of the proposed Davis Dam until the early 1940's. Davis Dam construction began in 1942, was interrupted by

World War II, continued again in 1946 and was completed in 1953. In 1943 Gordon C. Baldwin, assistant archaeologist for the Boulder Dam National Recreational Area, began a survey of the areas to be covered by the lake formed through the construction of the Davis Dam on the Colorado River. "This survey was carried out to see what, if any, archaeological sites would be flooded and destroyed by the construction of Davis Dam and the consequent flooding of the area. All prehistoric and historic Indian sites were to be investigated in order to determine their archaeological importance to ascertain whether any of these sites were of sufficient scientific importance to justify their excavation before the construction of Davis Dam. The area included in the proposed Davis Dam Reservoir area lies along the Colorado River in the states of Arizona and Nevada, extending about 67 miles below Boulder Dam" (Baldwin, 1943:1).

"For purposes of numbering and partially locating archaeological sites the following system has been utilized. A state is divided by each degree of latitude and longitude into rectangles; beginning in the upper lefthand corner of the state these rectangles are numbered A, B, C, D, etc. Each of these rectangles is then divided into 16 equal smaller rectangles, being numbered from 1 to 16, starting in the upper lefthand corner again. Sites are then numbered consecutively as they are found in each of these sub-rectangles, Arizona F:2:7 meaning the 7th site in sub-rectangle No. 2 of the 6th rectangle No. F, in Arizona. As state boundaries do not always follow degree lines, a rectangle is given the state designation of the state having the larger portion of a given rectangle. Thus, in this particular area, the entire region is in the large rectangle Arizona F, even though a portion of it lies in the state of Nevada. By means of the sub-rectangles the area covered by this survey can be divided into three sub-areas, Arizona F:2 down to the mouth of lower Black Canyon, Arizona F:6 south to and including Round Island, and Arizona F:10 through Cottonwood Valley" (Gordon, 1943:11).

The survey was started on March 17, 1943 and was finished by May 7, 1943, with a total of 25 days spent in the field. An outboard boat was utilized for a period of 8 days for a survey of the banks on both sides of the river. The remainder of the survey was conducted on foot, utilizing a

car for access.

"The area covered by this archaeological survey included both sides of the river from Willow Beach down to and including most of Cottonwood Valley. The area between Willow Beach and Boulder Dam was not covered inasmuch as the use of a boat would have been necessary. In addition, there are very few flats in this section and, since this marks the upper limit of the lake, with but little rise in water level, there would be very few sites covered. The area between Cottonwood Valley and the Davis Dam site lies almost entirely outside the boundaries of the Boulder Dam National Recreational Area. As these flats have been frequently flooded, there are probably few sites that can be definitely located. However, this area would have been covered also if a boat could have been secured for a few additional days. One hundred and fifty-five archaeological sites were located in the area covered by the survey... many of these sites are quite small temporary campsites and would not warrant further investigation. About 15 of these sites are of sufficient size and importance to be tested and at least partially excavated..." (Baldwin, 1943:8-9).

Between Willow Beach and the Cottonwood Island (which from Baldwin's information was the southern edge of the Boulder Dam National Recreational Areas at that time):

"sites are located mainly on the small benches or flats bordering the river. While there are a few situated on the tops of the low gravel ridges just above these benches, fully 97% of the sites are to be found along the lower sand and gravel flats... These archaeological sites are usually located on or near sand dunes, generally being on the south or southeast edge of the dune. However, a number of the larger, more permanent villages were situated at or near the center of a large, relatively flat sandy area. Most of these sites are small temporary campsites, probably being utilized on seed-gathering or hunting trips. This is especially true of most of the small rock-shelters located in the side of the rocky ledges in back of these sandy benches..."

This preliminary survey indicates that the following groups occupied this area at certain periods: Pueblo and Patayan cultures in prehistoric times, and the Paiute, Mohave and Walapai groups in the historic period. During the earlier era the Patayan culture was dominant, Pueblo elements appearing only as secondary influences wherever they occur. The Walapai and Mohave occupied much of the area during more recent times, artifacts of the Paiute culture appearing only sporadically along the upper canyon the the vicinity of Willow Beach" (Baldwin, 1943:10-11).

In 1947 Baldwin returned to resume his work in the Davis Dam reservoir area as a NPS Park Naturalist in the Lake Mead Recreational Area. This

research was a continuation of the work he had started in 1943 on archaeological sites he had located in his original survey and had recommended for further work. In 1947 the NPS funded Baldwin "to wash, label, and box all of the material recovered from the 1943 surface survey, to commence preliminary testing at five selected sites, to resurvey eight sites, and to survey five additional sites" (Baldwin, 1943:3). Late that same year additional funds were provided by NPA "permitting us to place a small excavation party in the field for about eleven weeks. During this period four sites were partially excavated, two others were thoroughly tested, and considerable minor testing and surveying was done at ten other sites" (Baldwin, 1948:3-4). During the time that the 1943 and 1947 recovered material was being cleaned and catalogued, material from six of the small cave sites excavated in 1936 by the CCC were also catalogued.

Of the 15 sites that Baldwin had considered important seven were resurveyed and tested with varying thoroughness and eight were resurveyed and test trenched where necessary. Ten additional sites from the 1943 research were resurveyed, one other was resurveyed and tested and five new sites were encountered and recorded in 1947. Baldwin did not work south of Cottonwood Valley, although he recommended in both his 1943 and 1948 reports that this area needed to be surveyed archaeologically prior to the completion of Davis Dam and the impounding of the lake waters.

The major sites that Baldwin excavated or tested are briefly reviewed in the following paragraphs. Arizona F:6:14 is located about seven miles south of Eldorado Canyon on a sandy bench within a wash area. Potsherds, flakes and fragments of a metate were on the surface of the site. "A series of five trenches were laid out equally spaced about the south and west sides of the bench...each about four feet in width and were extended down to undisturbed

river gravel, a depth varying from one to two feet at the edge of the bench to a maximum of three and a half feet nearer the center" (Baldwin, 1948:12). One cross trench was dug and six small test pits. There were no apparent stratigraphic sequences, no evidence of house structures or of storage pits. There was one possible exception, a hard packed area. Numerous potsherds were encountered in the excavation, but few artifacts other than stone tools, including manos, metates, projectile points, knife blades, scrapers and some ornaments. A few gypsum pendants were found, worked and unworked animal bone and only two shell fragments. Two thousand four hundred and thirty-five sherds were collected, only 40 were decorated while the remainder consisted of plain ware. Most of the plain ware was divided into three types, Topoc Buff, Topoc Stucco and Pyramid Gray. In addition there were two new types, which Baldwin named, after consultation with Colton, Eldorado Gray and Searchlight Brown. The decorated ware types included Needles Red-on-Buff, Topoc Red-on-Buff, Cerbat Red-on-Brown, and Aquarius Black-on-Orange.

Arizona F:6:22 was a large site about one and a half miles south of the previous site. The site was approximately 250 feet by 300 feet in size and was composed of low sand dunes with intervening eroded area. It was in the latter areas that the majority of the archaeological material was encountered. Over seven, non-consecutive, days the site was surface collected, three trenches and six test pits were dug. The site was shallow, with the major portion of the material being found in the upper three to four inches of midden. There were no indications of houses, but several fire hearths were encountered. Stone objects recovered included hammerstones, manos, metates, pestles, mortars and smoothing stones. The 74 flaked stone artifacts included projectile points, knife blades, scrapers, and drills. A total of 1,237 sherds were collected, of which 1,194 were plain ware, including Topoc Buff, Topoc Stucco, Pyramid Gray, Eldorado Gray, Searchlight Brown,

Sacramento Brown and Aquarius Brown. The few decorated sherds were of the Topoc Red-on-Buff, Needles Red-on-Buff, Aquarius Black-on-Gray and the Tusayan Black-on-Red types. Six sherds were considered intrusive types: Sosi Black-on-White, a probable Black Mesa Black-on-White and Boulder Black-on-Gray.

Arizona F:6:75 was located on the Nevada side of the river, a half mile south of Aztec Wash. Three parallel trenches were excavated across the upper part of the site and several small test pits, all containing only a few fragments of cultural material. Four trenches were excavated on the lower portion of the site which were more productive of artifacts. No house remains were encountered, lithic material was abundant including projectile points, knife blades, scrapers, choppers, metates, manos, mortars, pestles and a fragment of a maul or hammer with a shallow groove. Eight hundred and thirty-five potsherds were recovered of which only one was decorated, a fragment of a Topoc Red-on-Buff jar. The plain ware types included Pyramid Gray, Eldorado Gray, Topoc Buff, Topoc Stucco, Searchlight Brown and Sacramento Brown. Pyramid Gray composed almost 50% of the sherdware. On the surface there were two Paiute sherds and one historic square type of iron nail.

Arizona F:6:105 is situated on some low gravel ridges 100 yards west and behind the previous site, also on the Nevada side of the river. "On these terraces and on the summit of the ridges are a number of small rock circles or cleared areas in the gravel. These rock rings range from five to nine and one-half feet in diameter and are roughly outlined with small to medium sized boulders rather irregularly spaced" (Baldwin, 1948:53). There were 20 stone circles of this size, one somewhat larger and one rectangular one. Some brief test pits were dug, but no cultural material was

encountered and the stone circles "rest directly on the cleared gravel hardpan" (Baldwin, 1948:53).

Arizona F:6:1 and 6:2 are situated nearly three miles southeast of Eldorado Canyon on the Arizona side. These sites consist of several stone circles their diameters varying from 9'8" x 12'6" to 20'11" x 27'. "The unique feature of these sites however, is the presence of numerous petroglyphs pecked on the medium to large lava boulders covering the greater part of the area. These depict both geometric and naturalistic forms and many show excellent workmanship" (Baldwin, 1948:57). Only a few sherds of pottery were found including Topoc Stucco, Topoc Buff, Sacramento Brow, Pyramid Gray and Topoc Red-on-Buff.

Arizona F:6:8 is about one mile south of the two previous sites and is a large site, characterized by sand dunes. "Two long trenches were excavated across the main sand dune area and several test pits dug over the remainder of the site...No signs of houses were noted and occupation appeared to have been confined to a relatively narrow vertical zone from one to two feet in thickness. One circular rock outlined firepit was discovered at ground level "and three others a few inches below the surface. These were all circular in form, from twenty to thirty inches in diameter, ringed with small...fragments, frequently being of broken metates or mortars. No floor areas, remains of posts, or other signs indicative of houses were noticed about any of these firepits" (Baldwin, 1958:60-61).

Lithic data encountered consisted of manos, metates, mortars, pestles, hammerstones, a knifeblade fragment and a single projectile point. More than 1000 potsherds were recovered, both from the surface collection and from the excavation. Most of the sherds were local plain wares, including Topoc Buff, Pyramid Gray, Eldorado Gray with a few sherds of Topoc Stucco, Searchlight

Brown, Sacramento Brown, Aquarius Brown and Cerbat Brown. One new type was encountered, tentatively named Cottonwood Gray. Intrusive sherd types consisted of Tusayan Black-on-Red, Deadman's Gray, Deadman's Black-on-Gray and Aquarius Black-on-Gray.

Baldwin's site Arizona F:2:1 is the Willow Beach Site previously excavated by Willis Evans and the CCC under the supervision of Harrington. In the 1936 excavation there were no definite traces of house floors, numerous artifacts were found and a total of six human burials and one dog burial. In Baldwin's discussion of this site, he incorporates some of this earlier material.

"The present excavations were begun along the north face of previous excavations. A section of this face approximately 25 feet in length was cleared off and utilized as the beginning of a trench which was carried to the north extending across the entire width in three feet (about 1 meter) horizontal sections and approximately one foot (35 cm.) vertical sections. In the limited time during which excavation could be conducted this trench was extended to the north about 15 feet and to a depth of about 8½ feet. Along the river side of the sand terrace, approximately 25 feet northwest of the first trench and at right angles to it, a second trench about 20 feet in width was run into the bank about 15 feet in a similar series of levels... here for the first time in our excavations in the Davis Dam area were found definite evidence of stratifications...deposits containing artifacts, ashes, and other indications of human occupation were found in definite strata down to a depth of more than eight feet" (Baldwin, 1948:69-70).

The site had already been considered by Harrington as a camp area that was used sporadically over long periods of time and for a sufficient stay that burials occurred. Through Jumbo Wash, adjacent to Willow Beach, there is easy access to the hinterland and then from Willow Beach to areas down river. As Baldwin noted there is little land suitable for agriculture near the river at this locale. In Cottonwood Valley to the south there is much more flat land adjacent to the river that could have been utilized agriculturally.

"Although the present work revealed no signs of houses, the 1936 excavations found an oval area measuring 10 by 12 feet, with a firepit in the center, that appeared to be all that remained of a small hut. Quantities of burnt willows indicated that these might have been used to cover the sides and roof of the structure. The floor was only six inches beneath the present ground level. A great deal of cultural material, including numerous potsherds, fragments of several arrowpoints, knife blades and scrapers, turquois and shell beads, and a few burnt animal bones were recovered from the floor of the hut" (Baldwin, 1948:71-72).

In the area of the Willow Beach site, but 30 to 50 feet higher, were a number of small rock circles with cleared gravel floors, similar to the others found down stream from this site. In the excavations several fire-pits were found, one of which was lined with clay, others had rock around the outside of the pit.

"Cultural materials recovered at this site were more numerous and varied than at any other site excavated in the Colorado River valley, and ranged from Paiute pottery and arrowpoints on the surface to Pueblo and Patayan implements and utensils in the upper four to five feet of deposits and pre-pottery stone and bone implements in the lower levels down to a depth of over eight feet. Stone artifacts were abundant and included metates and manos, mortars and pestles, rubbing stones, hammerstones, hammers, arrowpoints, knife blades, drills, scrapers, spearpoints, large blades, and various types of ornaments, all occurring in the upper levels, and large points, manos and metates, blades, and scrapers in the lower levels" (Baldwin, 1948:73-74).

No pottery was found in the lower levels, which Baldwin considered pre-pottery. A single three-quarter grooved axe was found during the 1936 excavations, but is described by Baldwin in this 1948 report. It is suggested that this probably was a trade item from the southwest. Unworked mammal bones included specimens from mule deer, mountain sheep, jack rabbit, ground squirrel, and possible antelope. Some bone awls were found during the excavations. Shell beads and pendants were plentiful including olivella, abalone, glycymeris, and other materials as tortoise shell, slate, hollow bone, polished feldspar and gypsum.

The several thousand potsherds recovered included "in order of their relative abundance: Pyramid Gray, Eldorado Gray, Topoc Buff, Sacramento Brown, Searchlight Brown, Cottonwood Gray, Topoc Stucco, *Aquarius Orange*, and *Aquarius Brown*. Pyramid Gray and Eldorado Gray were by far the most abundant, with Topoc Buff also quite common, particularly on the surface and in the upper level...Intrusive sherds were fairly numerous and included Boulder Gray, Boulder Black-on-Gray, *Aquarius Black-on-Gray*, Deadman's Black-on-Gray, Deadman's Black-on-Red, Tusayan Black-on-Red, Sosi Black-on-White, and several varieties of Tusayan Corrugated and Shinarump Corrugated" (Baldwin, 1948:78-79).

Baldwin listed the frequency of the occurrence of pottery types by levels: Surface - Paiute ware, Topoc Buff, and Pyramid Gray; Level 1 (surface to 35 cm.) - Pyramid Gray, Topoc Buff, Searchlight Brown, Boulder Gray and Tusayan Black-on-Red; Level 2 (35 to 70 cm.) - Topoc Buff, Topoc Stucco, Pyramid Gray, Cottonwood Gray, Eldorado Gray, Searchlight Brown, Tusayan Black-on-Red, Deadman's Black-on-Red, and Sosi Black-on-White; Level 3 (70 to 105 cm.) - Pyramid Gray, Cottonwood Gray, Deadman's Black-on-Gray and *Aquarius Black-on-Gray*; Levels 4 and 5 - a few sherds of Pyramid Gray. Below this there were no sherds, except those associated with intrusive burials.

Baldwin includes in his 1948 report notes on the first six burials found in the 1936 excavations and describes the two burials found during the 1947 excavation. Six of the burials were adults, including the one associated with the dog burial, and there were one child and one infant burial.

At the conclusion of his excavations, Baldwin estimated that there was still well over one-half of the Willow Beach Site remaining unexcavated. He recommended further research at this area.

There were a few miscellaneous sites which Baldwin encountered during

this 1947 survey and excavation, which he does not describe individually in his 1948 report, but notes only specific artifact types he recovered from them. In this report on his research Baldwin has no estimate on the field days that were involved with the testing of these archaeological sites and no information on the techniques of excavation, or data recovery from sites. Consequently there is no way to quantify the process involved in the removal of the artifacts or the subsequent laboratory analysis. Essentially this is a typical archaeological report of the time period, a descriptive presentation of the data intermixed with theoretical interpretations.

The third excavation of the Willow Beach site was undertaken by Albert Schroeder, at that time, 1950, the archaeologist for the Lake Mead National Recreation Area. Schroeder's description of the Willow Beach area clarifies the appearance of that locale:

"The site is situated on the east bank of the Colorado River, on a sandy terrace in lower Black Canyon, 15 mi. south of Hoover Dam. The canyon, along this stretch of the river, is lined with rugged mountains and occasionally is broken by side washes that empty into the river. Along the banks on one or sometimes both sides there are a few narrow sand terraces built up by past floods and wind deposition. These are covered with scattered growths of mesquite, creosote, willow and occasional cactus, and the banks are lined with fairly thick concentrations of arrow brush...The practice of agriculture in the immediate vicinity is remote but possible. The few open spots in the canyon are barely large enough to accommodate more than an Indian campsite. The sandy terraces here are from 5 to 30 ft. above the river, most of which are not low enough for crops to obtain subsurface water seepage from the river" (Schroeder, 1950:8).

The field work was done between February 8 and April 14, 1950, by Schroeder and two field crewmen. "Two tests were conducted in the course of the work. The first was set down and extended to the northwest of the 1947-48 excavations. Cultural material was recovered to a depth of 1.5 m. Below this, tests revealed sterile earth to a depth of 3.5 m. below datum, beyond which no further testing was conducted. The second test was laid

out on the southeast edge of the 1936 excavations and it was here that the great majority of material and information was gathered. Excavations reached a depth of 4 m. in the deepest spot, and, throughout the trench, stratigraphy was clearly evident" (Schroeder, 1950:iii. See Figure 3, page 137 of Schroeder's report, for the plan of the excavation showing the 1936 and the 1947 excavations and his own Trenches IV and V).

"A horizontal grid was used in which each section measured 1 by 2 m. Each northwest-southeast grid line was given a number and those crossing at right angles were designated by letters. The point where two of these lines crossed on the north corner of a block was used to identify the block: for example, B-6, C-6, D-6, etc. The material was removed by artificial levels, each 25 cm. in depth, and the levels were numbered from 1 at datum down to 16 in the deepest test. As these tests were the fourth and fifth excavated in this site, the smaller trench was designated as trench IV and the larger as trench V" (Schroeder, 1950:7).

There was no stratigraphic evidence of soil changes in Trench IV, but a continuous blending of sand and charcoal down to sterile. No evidence was seen that flood waters reached the cultural levels to displace the contents. This may relate to the position of this trench higher up the slope above the beach. "The heterogeneous mixture of the cultural deposit was probably caused by wind action and constant trampling over the site by the Indians during occupation periods. In addition, the presence of quantities of thermal fractured rocks from the cooking and roasting pits which occur through these deposits indicates that the occupational surfaces must have been raked over quite often whenever the pits were cleaned out for reuse" (Schroeder, 1950:9).

Trench IV contained two definite horizons the lower of which was preceramic. According to Schroeder the lower level just above sterile, contained stone implements only, with occasional intrusive sherds in the upper part of this level. Burned animal bone was found throughout both

cultural horizons, indicating hunting was a major factor for the groups using this site area.

All material recovered is described by Schroeder and listed in tables according to the level in which it was found. It is further divided by ceramic and preceramic designations, and from his pottery table it would appear that Levels 1 through 3 were ceramic and Levels 4 and 5 preceramic. Worked bone was found in Levels 4 and 5, knives in Levels 1 through 3, a scraper in Level 2, drills in Levels 1 through 3, points in Levels 2 through 5, a pecking stone in Level 4, manos in Levels 2 and 3, a metate in Level 2, oval stone discs in Levels 3 through 5, cooking pits in Levels 2 and 3, shell in Levels 1 and 2, asphaltum in Level 1 and on the surface only, turquoise and steatite. A total of 161 sherds were found in Trench IV in Trench IV in Levels 1 through 3, including Pyramid Gray and a Variant, both Lower Colorado Buff Wares; Boulder Gray, a Moapa Gray Ware; Aquarius Brown and Cerbat Brown, both Tizon Brown Wares; Kirkland B/O, Deadman's B/G, Kirkland Fugitive Red, Kirkland Orange and Deadman's Fugitive Red, all San Francisco Mt. Gray Wares; and Aquarius Black/Gray, a Prescott Gray Ware.

In Trench V the stratigraphic sequence was divided into fifteen layers, designated A through O.

"It will be noted that the culture-bearing sand and charcoal zones are interbedded with silt deposits of varying thicknesses. These apparently represent the end stage of various floods of the Colorado River. All of these silt strata dip toward the river and are of greater thickness on the river side of the trench. These silt deposits, exceptionally hard, acted as seals for the various cultural horizons that they covered. Due to this fortunate circumstance, there was no chance for material from one horizon to become intermixed with that of another. The history of the site is one of successive Indian occupations interspersed by periods of flooding... Associated bone material in the deposits of Willow Beach does not indicate any environmental change" (Schroeder, 1950:19).

Burnt and broken animal bone was recovered from all layers of Trench V

similarly to Trench IV. Animals identified were antelope, mountain sheep, beaver, chuckwalla, wood rat, cottontail, jackrabbit, tortoise, duck and mourning dove, as well as limited amounts of fish bones. Artifact materials consisted of worked bone, choppers and other percussion implements, knives, scrapers, drills, a graver and a reamer, projectile points and blades, pecking stones, hammerstones, manos, metates and some raw materials as hematite and hardened clay. Roasting pits were found in Layers B, C, F, G, J, and O; cooking pits in Layers B and C, and fire pits in Layers B, C, and J. Several burned timbers were recovered from Trench V, some of which were imbedded in an upright position forming a kind of arc, and there was one possible post-hole.

A total of 1,260 sherds were recovered from Trench V and were found only in Layers B and C, and 160 sherds were encountered in a "pier test" dug adjacent to Trench V. In Layer C of Trench V were found Lino Black-on-Gray, Boulder Gray, "Utah" Gray Ware, Logandale Gray Ware, Cerbat Brown and Verde Gray pottery types; in addition to these types in Layer B were Aquarius Black-on-Gray, Aquarius Brown, North Creek Gray, Paiute Ware, Sandy Brown, Aquarius Orange, and Pyramid Gray. Similar pottery type distributions were found in the "pier" test with one additional ware, Moapa Black-on-Gray.

Schroeder divided the cultural material from both trenches into various horizons, correlating the recovered artifacts for Trench IV with the stratigraphic sequences derived from Trench V. In Trench V he determined four stone horizons and three ceramic horizons. Four radiocarbon dates were obtained from charcoal recovered in Trench V and they gave a time span from about 250 B.C. to about 1450 A.D. There is always the possibility, as Schroeder points out that river water flooding the site could have contaminated the charcoal with other organic materials, so the dates may have been affected.

In this report Schroeder reviewed and compared the data recovered from the previous excavations and his own. He pointed out that while the foreman of the 1936 excavation had worked on previous archaeological sites, his notes were mainly notes of the daily record of recoveries with some sketches or remarks. There is no detailed record of this 1936 work.

In discussing Baldwin's work in 1947 he reported that the manuscript "on these excavations was preliminary and as a result did not contain statistical and detailed analyses. The material recovered consists mainly of potsherds and a few artifacts which were treated in a general discussion along with a quantity of the material from the 1936 excavations...Since there are no notes or profile drawings on the 1947 excavations, and none of the material was catalogued, no direct comparisons are possible...None of the discussion on stratigraphy, however, was restricted to either one of the two trenches excavated, and because of this it is impossible to carry the profile of the 1936 trench through the 1947 excavations into the 1950 Trench IV area" (Schroeder, 1950:71).

In these comparisons Schroeder is attempting to correlate all the recovered artifacts from these excavations and draw conclusions as to the aboriginal utilization of Willow Beach through time by various prehistoric groups.

In 1949 Carr Tuthill, Curator at the San Diego Museum of Man, accompanied by Louis Quayle, a museum assistant at the same institution, did an archaeological survey of the Lower Davis Dam Reservoir Area. This survey was done at the request of Dr. Erik Reed of the NPS, Santa Fe, New Mexico. The purpose was to survey the area below where Baldwin ended his work at Cottonwood Island, the remainder of the distance to Davis Dam. The work was done from May 4 to May 12, 1949, utilizing a jeep for access and walking the banks

on both sides of the river. One area approximately 4 to 5 miles long, they were unable to reach was on the Nevada side of the river just above Davis Dam, where the Newberry Mountains descend close to the river. An additional area that was not surveyed lay south of Tyro Wash on the Arizona side of the river. "Several very large arroyos empty into the river here in a stretch of a mile and a half or two miles. Separating the arroyos are the remnants of an old and high river terrace that will be well above the high water mark when the lake is flooded. Experience with similar but smaller areas downstream convinced us that the lack of a flood-plain suitable for agricultural pursuits was not conducive to any large settlements or camps" (Tuthill, 1949:2). Their assumption was the prehistoric people of the area were agriculturalists and since in this section of the Colorado River between the south end of Cottonwood Island and Davis Dam there were few broad flood plains, there would be no permanent settlements close to the river. "It seems probable that with a large, flat, fertile valley around Cottonwood Island which could be farmed easily and with the same conditions existing below Davis Dam Site, the area which we surveyed was used largely as a travel route (and) the few sites we found represented small temporary or over-night camps" (Tuthill, 1949:2).

"Twenty-one sites that will either be flooded or very near the high water mark were found and recorded. They can be grouped more or less as follows: 1. Lithic sites with no architectural features. 2. Lithic sites with Malpais rings, house rings. 3. Lithic and pottery bearing sites, no architecture. 4. Sand dune camps. 5. Trail shrines. 6. Caves used for living quarters and storage. 7. Buried hearths. All of the sites are small and none of them warrant excavation or further survey...

The pottery-bearing sites have sherds of the types called Yuman II and Yuman III by Rogers. Baldwin used Colton's classification and called similar sherds he found Patayan. After examining Baldwin's sherds at the National Park Service headquarters in Boulder City, Nevada, we feel that ceramically speaking, at least, Patayan and Yuman are basically one and the same thing" (Tuthill, 1949:3).

A single hearth was found exposed in the river bank at a depth of three and one-half feet. It was felt by Tuthill that this was one of many that had been covered by floods over time by the Colorado River, and the depth was not an indication of antiquity. On river terraces 25 to 50 feet above the river there are "signs of occupation or of having been used as workshops. Percussion fractured rocks and cobbles and chips are often found even when there are no signs of house rings or depressions... We found no sherds in association with any of the house ring sites found in the lower Davis Dam Area and we came to the conclusion that these are non-ceramic site...Of the two caves showing signs of occupation, one had Yuman II sherds and the other Yuman II and Yuman III. Two storage caves with Yuman II pottery were also found" (Tuthill, 1949:4-5).

Their conclusions for the survey of this section of the river was that there was little use of the area close to or along the river, except as a travel route. They concluded that the sites they recorded were temporary camp sites and that much of the archaeological evidence on the banks of the river had been buried or destroyed by flooding.

In the summer of 1949 Barton Wright, a graduate student at the University of Arizona, Tucson, conducted an archaeological excavation at Catclaw Cave under the auspices of the University of Arizona Archaeological Field School, with an NPS agreement to extend to them the San Diego Museum of Man Antiquity Permit. The work was carried out between May 30, and July 15, 1949. Three University of Arizona students assisted in the project. "The site is located on the Arizona side of the river fifteen miles downstream from Hoover Dam, and one mile north of U.S. Geodetic Survey Cable 17. The cave is 200 yards from the Colorado River, the floor is 648' above sear level" (Wright, 1949:1). There is some confusion in Wright's numbering system and

description of Catclaw Cave relative to the Willow Beach site. Baldwin through his system had assigned the number Arizona F:2:1 to the Willow Beach Site in 1943, but in 1949 Wright utilized the same number to designate Catclaw Cave. Schroeder in his 1950 publication on the excavation of Willow Beach stated that the site is 15 miles downstream from Hoover Dam, although Brooks (1977) in a boat survey on the river recorded the Willow Beach Site at approximately nine miles downstream from Hoover Dam. Wright in his detailed description of Catclaw Cave said that it was between four and five miles downstream from the Willow Beach Site. Wright's positioning of Catclaw Cave as approximately fifteen miles downstream from Hoover Dam and four to five miles below Willow Beach concurs with Brooks' recent estimate by river of the Willow Beach Site at about nine miles below Hoover Dam.

Catclaw Cave was excavated to recover any available material before the imminent rise of waters impounded by the construction of Davis Dam. At the time Wright conducted this excavation, the cave was considered potentially significant Payayan site on the river.

"The cave is an opening in the base of a basalt cliff 12.30 meters wide by 12.40 meters deep and 3.4 meters high at the mouth. There were strong evidences of occupation on the floor of the cave and along the banks of the nearby river. The method used in excavation was a test trench put through from the foot of the talus slope in front of the cave to a sterile bench in the rear of the cave. With the completion of this test trench and the determination of the depth of culture-bearing material, a test pit was sunk to determine the depth of the sterile deposits. The cave floor was not reached in six meters but the test pit was abandoned because of the danger from sloughing walls. Following this a broadside was started at the beginning of the talus slope and carried throughout the cave, clearing all culture bearing material. The waste was backfilled into the excavated areas" (Wright, 1949:2).

The cave fill showed definite changes in that the surface layer was wind blown silt (Level 1), below which lay clays, silts, sands and fine

gravels (Level 2). These layers had been cut through by fire hearth pits and caches. The clays are also evidence of occasional flooding of the river into the cave, and these intermixed with wash detritus extends 6.5 meters to the bottom of the test pit that was dug. Level 1 is the only culture bearing layer and is apparently less than 1 meter in depth. The areas excavated were divided into the following horizontal divisions: talus slope, platform, terrace, talus cone, bench, chamber and chimney.

Several types of pits and/or hearths were found, including a feature consisting of postholes with a concave central depression, which is referred to by Wright as a "lodge". "The depression measures .85 cm. by 1.00 cm. with the longer side oriented parallel to the bench at the rear of the cave and cut partially into it. There are postholes at each corner and all are extremely shallow with an average depth of .10 cm. and a diameter of .08 cm. The northeast and southeast postholes were rock-lined...The northern edge of the floor still retained a fragment of rough, thin, mud plaster. A partially burned yucca pod and a sherd of Pyramid Gray lay on this plastered area" (Wright, 1954:18). There were five pit hearths, nine basin hearths and four grass lined pits, none of which occurred in the lodge. None of these hearth types were found during the Willow Beach Site excavations.

Stone artifacts included scrapers, projectile points, knives, drills, spokeshaves, choppers, pulping planes, metates, manos, hammerstones, and possible polishing stones. Turquoise specimens included a bead and an unworked piece. Hematite staining was found on most recovered artifacts and one hematite cache of 15-20 large lumps occurred in a pit, stored in a grass bundle. Few of the lithic artifacts recovered were sufficiently diagnostic for comparison with the Willow Beach Site series. "There were

more unbroken artifacts of bone from the cave than any other material. These artifacts were generally in excellent condition. In some cases the tools still retained dried flesh" (Wright, 1954:33). The bone artifacts included fleshers, bone awls, an antler flaker, bone tinklers, hoof tinklers, a bone snare pin (probably a fish gorge), bone die, a bone tube, a bone spatula, a bone disc and numerous bone fragments showing polishing or drilling. Only three olivella shell beads were found.

Six clay figurines were found in the deposit, which were divided into two types: "The first type is represented by two specimens of tubular, untempered clay. Their shape is that of an elongated wedge with the head at the widest end. The eyes are represented by two parallel incisions at either edge close to the top of the head, and are separated by an applique of pinched clay for the nose. One specimen is that of a female figure broken just below the appliqued breasts...The second type, represented by a single specimen,...is a rounded fragment of unfired clay with one end pinched out to form a curved beak-like nose. One side of the nose is marked with a black bull's-eye, while the other side is decorated with a hatchure of two sets of parallel black lines crossing at right angles. The neck portion is decorated by two parallel rows of punctate marks extending across the front and around the sides but absent at the back" (Wright, 1954:42). The three other figurine fragments are incomplete.

In addition to the figurines of unfired clay, 24 fragments of unfired miniature pottery vessels were found. Some of these were decorated by incising or painting, some showed fingerprints and others appear to have been worked after the clay was partially dried out, so that the surface is heavily cracked. One possible interpretation is that these were made by children, either as play objects, or as part of their learning behavior.

Perishable material encountered in the excavation were fragments of string from yucca fiber, willow bark, cotton, and hair and skin. Basketry was fragmentary, with the exception of one complete coiled basket. Fragments of two plant fiber sandals, bark bundles, an arrow shaft, a fragment of fringed hide belt, fragments of sewn hide, and a variety of plant remains many of which showed evidence of cutting or chewing.

A total of 1,078 sherds were found, which are listed in order of relative frequency of occurrence Pyramid Gray, Cerbat Brown, Parker Buff, Aquarius B/Gr, Boulder Gray, Aquarius Brown, North Creek Gray, Sandy Brown, Parker Stucco, Deadman's Gray, Deadman's B/W, Boulder B/Gr, and one unidentified B/W. Most of the sherds in the deposit came from either the talus slope at the cave entrance or near the consolidated bench at the rear of the cave. The sherds are similar in frequency of occurrence and types to those found by Schroeder at Willow Beach.

The flora and fauna recovered from the excavations was extremely varied and included the fossil mandible (found in a rat's nest at the back of the cave) of a large sheep, "larger than any fossil or recent sheep so far known in North America" (Wright, 1954:59) and the horn core of a bison, which apparently was a trade item. The modern mammals and birds were similar to those found at Willow Beach. Of unusual interest is the amount of fish remains, which include over 375 bones representing two families and several species of fresh water edible fish. This is the most abundant evidence of fishing by the aboriginal inhabitants found at any prehistoric site recorded in the LAME area. Seven corn cob specimens were identified by Mangelsdorf, some of which represent almost pure maize. There is no comment by Wright describing an area in the vicinity of Catclaw Cave that could have been utilized agriculturally, so presumably these specimens were brought into the river region.

The analysis of the material from Catclaw Cave was difficult as there was no soil stratigraphy in the deposit, but typologically Wright divided the artifacts into two groupings.

"The pottery assemblage...is identical with that found in Layer B (Willow Beach Phase) at the stratified site of Willow Beach by Schroeder. There can be no doubt in assigning Catclaw Cave to the Willow Beach Phase on the basis of pottery alone. The second grouping, one type of figurine, pseudo-pottery, and the bone die, all have similar counterparts among Basketmaker artifacts...In addition to the preceding groups, a third group is composed of artifacts which probably represent the perishable material accompanying the Willow Beach Phase... A brief summary of the history of the Cave is one of intermittent occupation over a considerable span of time. The cave was probably used as an animal habitation at an early date... There is more evidence to suggest use of the cave by Basketmaker peoples from the Virgin Branch of the Western Anasazi working southward from the Virgin River some time prior to 750 A.D. Their use of the cave appears to have been for other than living quarters, because of the lack of utility items and the presence of numerous painted non-utility artifacts. Later an indigenous group responsible for the manufacture of Pyramid Gray appears to have resided in the cave, and either traded with or was visited by members of the Cerbat Branch of the Payayan to the east. This phase has been designated the Willow Beach Phase dated from 900-1100 A.D. by Schroeder at Willow Beach. Following this, there is no evidence of occupation until modern times" (Wright, 1954:70).

In 1973 Richard H. Brooks, NAS Director, conducted a survey on a number of proposed development projects for NPS within LAME boundaries. In addition to the survey of the proposed development project sites, other areas with high recreational useage were included. The work was conducted intermittently between 1971 and 1973 related to the varying priorities of the construction projects. The following areas surveyed during this research fall within the Lake Mohave Region: Eldorado Canyon Landing or Nelson's Landing, Cottonwood Cove, Christmas Tree Pass, Katherine Landing Residential Area, and Willow Beach. Field crew varied from three to five individuals, depending upon the area to be surveyed. Construction or other project areas were intensively surveyed and surface collections were made of sites where necessary.

Areas of high recreational use were surveyed in a controlled reconnaissance fashion.

Material found in the Nelson's Landing area consisted of a historic cemetery relating to the mining activities at Nelson in the late 1800's or early 1900's and a number of archaeological sites, including possible aboriginal trails, house circles, concentrations of lithic workshops and a possible historic circular rock alignment. "The lithic materials from these sites consisted mainly of a volcanic cream-colored silicious material. The rocks utilized in the rock alignments and house circles for the most part are basalthic boulders...In this area there appears to be a combination of living areas associated with lithic workshops. There was no ceramic material located...It was noted that all of the lithics collected here were formed through percussion flaking and there was no evidence of pressure flaking" (Brooks, 1974:9).

Cottonwood Cove is south of Nelson's Landing on the west side of Lake Mohave and east of the town of Searchlight, Nevada. No historic sites were encountered during the survey, but three archaeological sites were recorded. The three sites included a circular depression in the desert pavement with an associated lithic scatter, and two small shelter sites. Isolated lithic waste flakes were found on the terraces between the shelter sites and Cottonwood Cove. Additionally stone circle sites have been reported in the area by an avocational archaeologist and have been recorded since the report on this survey. Artifact material consisted of a metate, two possible Paiute sherds and numerous waste flakes.

The portion of LAME located in the Newberry Mountains on the west side of the Colorado River and north of Davis Dam is usually referred to as the Christmas Tree Pass area. The sites that were observed in the Christmas

Tree Pass area on this survey are off the LAME dirt access road which connects to Nevada State Highway 77. During the brief reconnaissance in 1973 "one large shelter site was noted on the south side of the road within the Park boundary. The midden area extends approximately 30 meters along the base of the cliff and about 10-15 meters outward from the cliff. The surface midden has a dark black texture with a light scattering of lithic material visible" (Brooks, 1974:21).

It is also in this same region that the Grapevine Canyon petroglyphs are located. There are several additional vandalized shelter sites not too far distant from the locale of the petroglyphs. The large shelter site recorded during this survey had been disturbed by campers, but apparently not vandalized at the time of the research.

The area in the Katherine Landing Residential Section was extensively surveyed at the site of the new sewage disposal area and no historic or archaeological materials were encountered.

"Two miles north in the present residential area adjacent to the lake two projections of the former terraces extend into the lake. On each of these a site was located. These were given temporary numbers, Arizona Katherine Landing A and B. Site A consisted of two badly distorted circular rock features in association with a minimal lithic scatter. This site is 100 meters west of Lot No. 36 in the residential area. The features have been disturbed through recreational useage.

Arizona Katherine Landing Site B is located directly across the small cove from Site A. This included four circular rock features, of which two were badly distorted also through recreational activities. Again a minimal amount of lithic materials were associated with this site...A few waste flakes were collected and one chopper. The chopper was made from volcanic material and percussion flaked" (Brooks, 1974:24-25).

No archaeological materials were found in the proposed construction area of Willow Beach, although on the terrace above the campground area "a series of house circles were located. These were situated on the bench overlooking the river and a number of them had been badly disturbed. Several

in the more inaccessible areas are in relatively intact condition. Some scattered waste flakes were found in the vicinity, although no pottery ware was encountered" (Brooks, 1974:52).

"On August 30th, Mr. and Mrs. J.F. Schulte and their children discovered a human skeleton eroding out of a sand bar approximately a mile below Willow Beach" (Maxon, 1971:1). On September 2, 1971, James C Maxon, then the NPS archaeologist for the LAME area, excavated the burial, accompanied by the Schulte family and Ranger Schippleck, as well as Maxon's two sons. "The burial site was on a long sandy beach on the Nevada shore of Lake Mohave just over a mile below Willow Beach...This site had been previously designated as Arizona F:2:3 in the Lake Mead Archaeological Survey...The burial itself was located about 60 feet from the shoreline (water level 635.20 feet) and was between the high and low waterlines. About half of the skull was exposed above the level of the sand and the rest of the skeleton was just below the surface. The individual was in a flexed position, lying on the left side...In general, the bones were in poor condition, and were quite fragmentary" (Maxon, 1971:1). It was determined that the skeleton was that of an adult male individual. A number of wasteflakes were encountered in the vicinity of the burial, in addition there were two possible polishing stones.

"A small collection of pottery was made from the sand bar. Most of the material appeared to be Parker Buff. There was, however, one sherd of a corrugated Pueblo Ware and several possible sherds of Pyramid Gray" (Maxon, 1971:2).

In March, 1976, Kathleen Quinn, working under the sponsorship of NPS Western Archaeological Center, Tucson, conducted an archaeological survey on the Nevada side of the Colorado River south of Nelson's Landing.

She was assisted in the field by three people, also from the Western Archaeological Center. Field work was conducted between March 16 through 26, 1976, with an additional five-day extension. The purpose of the survey was to study the "feasibility of developing a marina along the west side of Lake Mohave, just northwest of Fire Mountain. The proposed marina would replace the facility at Nelson's Landing, which was destroyed by flood in 1974... The survey area is on the west side of Lake Mohave, about one and a half miles south of Nelson's Landing in Clark County, Nevada" (Quinn, 1976: 1 & 9).

Utilizing the environmental background of the area, Quinn divided the survey locale into six units

"on the basis of terrain and vegetation. These units appear to correspond with differences in the archaeological remains. Sites and isolated artifacts were found in Units 1, 2, 3 and 6. Isolated artifacts were found in Unit 4. Unit 1...is the area along the lake, consisting of an upper and lower, border plateau...Five sites were found in Unit 1; three were lithic sites, one was a lithic site with features and one was a multi-component site (including historic and prehistoric materials)...Unit 2 is west of Unit 1 and...consists of ridges, varying in width from 10 meters to 40 meters, separated by washes draining northeast into Lake Mohave. At the eastern edge the ridge slopes steeply to the shoreline...twenty-one sites were found in Unit 2; 14 were lithic sites and seven were lithic sites with features...Unit 3 is on the south side of the jeep trail and west of the plateaus above the lake... A large wash, draining to the south, runs somewhat perpendicular to the eastern edge of this unit...Although Unit 3 was not completely surveyed, seven sites were recorded; six were lithic sites and one was a lithic site with features...Unit 4 consists of systems of linear ridges of varying height and breadth, some running uninterrupted from the western to the eastern boundary...Only isolated artifacts were found in this unit... Unit 5 includes several broad washes divided by narrow groups of ridges...No prehistoric sites were recorded in Unit 5, but several mining claim markers were found...Unit 6 contains three distinguishable landforms: deep washes, narrow linear ridges and more circular hills in front of the mountains in the northwest corner of the survey area...Lithic sites were recorded in Unit 6" (Quinn, 1976:13-15).

Fifty-three sites were recorded during the survey, thirty-six were

prehistoric and seventeen were historic mining claim markers. "Seven sites are classified as lithic scatters covering a small surface area; five sites are lithic sites with a medium to dense artifact assemblage in a small area; five sites consist of light to medium lithic debris covering a somewhat larger area; eight lithic sites cover a large area, with a medium to dense artifact assemblage; nine sites consist of lithic debris and features, such as rock circles, and two sites are multi-component, including both prehistoric and historic material" (Quinn, 1976:23). Quinn has divided the rock circles into two possible uses, the larger ones for habitation and the smaller ones as hearths. The appearance of the rock circles vary in that "some are defined as boulder alignments with cleared interiors and several are cobble alignments with slightly depressed, cleared centers. Other circles are found on well-developed desert pavement, with cobbles defining the circle but with no variation between the exterior and interior surfaces...A feature was found at Sites 11 and 31...along the crest of a ridge with a gentle slope that is cleared of desert pavement and which, in profile, appears to be scooped out of the side of the ridge. Four of these features were recorded, two at each site. One of those at Site 11 had very soft soil beneath the surface and included within its limits a small basalt boulder with large flakes around it. Cultural material was concentrated around these features" (Quinn, 1976:23).

In interpreting the material recovered the activities were:

"divided into three categories: (1) quarrying (selection by people of materials for making tools), which might be represented in the artifact assemblage by large quantities of cobble fragments and cortex flakes; (2) preparing the raw materials for making tools, including removal of cortex and fashioning cores to produce specific types of flakes or bifaces, which later would be made into scrapers, knives, graters and other tools, and (3) tool manufacturing, evidenced by relatively small thin flakes. All of these activities might be found within a single site...

Bifacially flaked artifacts, hammerstones, cores and a few utilized flakes were also recorded at some of the sites. No prepared tools, such as projectile points or scrapers, were found. Several possible choppers and chopping tools were observed, but a positive identification was not possible. One metate fragment was found...The lack of finished tools indicated a preoccupation with quarrying at the sites, the tools being finished elsewhere.

Pottery was found only at Site 48. The pottery was concentrated in two areas at the northern end of the site, one with more than 30 sherds and one with three. All are tan sherds, some with orange visible in the matrix" (Quinn, 1976:29).

In conclusion Quinn states that "the sites generally represent limited activities, with quarrying and preparation of raw materials the main concerns. Evidence of habitation areas at some sites, the amount of lithic debitage and the lack of habitation units at other sites suggests a more intricate integration with the environment than is at first discernible" (Quinn, 1976:30).

In July, 1976, a Bureau of Land Management (BLM) Clearance Level Class III survey was conducted in an area on the Nevada side of the Colorado River for the BLM Las Vegas District Office. The work was carried out by R.H. Brooks, NAS Director, as principal investigator. "The archaeological survey was conducted in the Fort Mohave area, located in the southernmost tip of Clark County, Nevada, on the west side of the Colorado River. Bullhead City and Big Bend are situated on the east side of the Colorado River in Arizona, the latter city directly across from the project area" (Brooks, 1976:4). Sixty man days were utilized in completing the field work and an additional 17 man days were used for laboratory analysis and report preparation.

The purpose of the survey was for clearance of the land for possible transfer from the BLM to the State of Nevada. "The project area was to be investigated 'at the Nevada BLM's clearance level #2 (Reconnaissance Survey)', in that only two quarter sections, the northwest and southeast one-quarters, were to be surveyed in each section with the Fort Mohave project

area. Within each selected quarter section the survey was to be conducted... at the Nevada BLM's clearance, Class #3, Intensive Inventory Survey. This requires that the survey crew walk parallel transects close to 10 meters apart, where possible" (Brooks, 1976:21). In the numbering and mapping system "Section numbers were utilized as sample unit numbers and these were broken down into their four quarters or quadrants; the northwest quadrant being 1, the northeast quadrant, 2, the southwest quadrant, 3, and the southeast quadrant, 4. For each section in the project area...two quadrants were surveyed, the northwest (1) and the southeast (4)...All sites were evaluated by the BLM Cultural Resource Evaluation System in the field to determine their cultural significance" (Brooks, 1976:25).

Within the survey area the "project terrain was divided into two physiographic areas, the Colorado River flood plain, which contained dense growths of vegetation, and the alluvial fan sloping from the Newberry and Dead Mountains towards the Colorado River valley, with a sparse vegetation cover...On the second river terrace above the flood plain a number of historic sites are the results of the BLM leasing land to small ranchers for cattle-grazing in the adjacent flood plain" (Brooks, 1976:67). On the second terrace overlooking the flood plain there is a small historic cemetery in a privately owned section of land. Prehistoric sites on the second terrace consisted of workshop areas, cobble waste areas, small circular cleared, and cleared areas with rock outlines. There was a limited amount of pottery and the lithic materials were locally derived. "The prehistoric sites found on the alluvial fan area were situated on the ancient river terrace remnants. These sites were...two lithic quarry workshop areas with associated fragments of a ceramic olla" (Brooks, 1976:68) and seven lithic quarry workshops.

During the survey of the quadrants no sites were found in the river flood plain which was covered by dense growths of plants, except where the levees were located. "The second river terrace, which is the lowest extension of the alluvial fan just above the flood plain, contained all the historic sites located during the survey...The prehistoric sites on the second terrace consist of lithic quarry workshops, lithic scatters and concentrations and some outline features. There were isolated finds both of ceramics and lithics recorded in these survey quadrants...No diagnostic artifacts were encountered among lithics of these quarry workshops. There is no indication that the quarry workshops have any great depth or can be related to the creation of the river terraces from which these ancient remnants were derived. Ceramics were found at two of the workshop areas on the terrace remnants and other sherd ware was found as isolates in the upper alluvial fan area" (Brooks, 1976:69-70). Although collecting of material was not an integral part of this survey, some data was brought in for laboratory analysis.

"Fifty-nine sherds of pottery were recovered during this survey. Fifty-two of these sherds are of Lower Colorado Buffware. Eleven sherds exhibited a stucco finish, characteristic of this ware. Lower Colorado Buffware was made by Yuman groups along the Lower Colorado River and Schroeder (1951) dates it at pre-900 A.D. to post-1900 A.D. Seven of the sherds recovered are of Tizon Brown Ware at about 700 A.D. to 1890 A.D.

Lithic materials collected during the Fort Mohave survey are characteristic of a percussion flake and tool technology. Lithic material consists mainly of large percussion flakes recovered from cobbles, randomly flaked cobbles and cobbles exhibiting minimal unifacial and bifacial flaking along edges formed by percussion. Microscopic utilization evidence, when present, was of battering. Quarry material consists of several varieties of quartz including chert, chalcedony and quartzite. A few objects were made from porphyritic igneous material" (Brooks, 1976:71).

The most recent archaeological research in the Lake Mohave region, south of Hoover Dam was a survey conducted intermittently between February

and March, 1977, by the Nevada Archaeological Survey, Southern Division, University of Nevada, Las Vegas. R.H. Brooks served as principal investigator with a field staff of four individuals, not all of whom went on each field trip. "There were a total of fourteen man-days utilized during the field project, involving four separate trips up the river, and over 12 man-days used in the laboratory and report preparation" (Brooks, 1977:1). The archaeological inventory for the Bureau of Reclamation consisted of a reconnaissance along the Colorado River between Hoover Dam and Willow Beach "on both sides of the river to the height of the 800' contour line. The survey was...conducted from the level of the existing dammed river surface. All arroyos were...examined for both historic and prehistoric remains and the cliff faces for potential aboriginal shelter areas and rock art sites" (Brooks, 1977:1).

The different survey trips were designed to check the river at varying levels dependent upon the amount of water released from Hoover Dam. As a result of this method of conducting the survey, one site was recorded that is covered during normal river high water levels.

"Prior to the construction of Hoover Dam, itself, apparently no archaeological survey had been conducted in the Black Canyon area. This area is referred to by G.C. Baldwin in his 1943 survey prior to the construction of Davis Dam. He stated in a manuscript written for the National Park Service that 'the 1943 survey and the 1947-48 excavation program were confined to the section of the Colorado River valley lying between Willow Beach and Cottonwood Island. Above Willow Beach the rather sheer walls of Black Canyon and the more or less complete absence of benches or other open areas limit the possibility of permanent settlements having been located in that section' (Baldwin, 1948:8-9)" (Brooks, 1977:2)..

Utilizing a pontoon boat for access all arroyos or tributaries entering the Colorado River, terraces, benches and cliff faces were explored. "Starting from the Hoover Dam and proceeding systematically down river, both sides of the river valley were surveyed on foot. The precipitous cliff walls in many sections of the Black Canyon prevented possibility of survey or aboriginal prehistoric utilization. Landings were made wherever the terrain permitted and the survey crew would then proceed to walk up each arroyo, explore each sand bank and check the terraces and arroyos as far as the 800' contour...Where the arroyo mouths were wide at their entrance to the river, a number of 10 meter wide transects were utilized to cover the accessible land surface...The mile markers on the cliff of the Black Canyon between Willow Beach and Hoover Dam served as a basic division markers for locating the various arroyos, sand bars, potential shelters and other features investigated" (Brooks, 1977:6-7).

A total of thirty-one localities along the river were intensively surveyed, and:

"four archaeological sites were located. There were two additional locales, (one containing an isolated broken metate with associated waste flakes) considered as having archaeological potential. The archaeological content of the four sites was meager, with limited amounts of sherddware, occasional waste flakes and some utilized cobble material. One site, Willow Beach #2, contained buried hearths that were exposed just at the river's edge at high water, and during one trip at low water, a variety of artifact materials were recovered, i.e., scraper, knife tip, hammerstone, chopper and a sherd. This site, because of its proximity to Willow Beach proper, can be singled out from the four sites recorded, as having potential archaeological significance...In addition to the four archaeological sites and potential archaeological locales, a single isolated waste flake was observed and a unifacial mano was recovered at separate locations along the river.

The Canyon contains a number of historic features, which were noted, as the ringbolts in various areas along the river. These ringbolts were used to winch steamboats up the river prior to the construction of Hoover Dam"(Maxon, 1972).

"Several arroyos contained prospect holes and associated historic

mining equipment. Particularly evident is the historic gauging station and catwalk related to the construction of Hoover Dam. Activity related to dam construction includes also the remnant of a single sonete building marked on the topographic sheet as a ranger station. An adjoining arroyo had been heavily quarried to procure rock for the construction of the ranger station and there is a trail leading to and from it" (Brooks, 1977:13-14).

The sherds recovered was identified in the laboratory as Colorado Buff-ware, Tumco Buff, Parker Buff, Pyramid Buff and a probable Pyramid Gray. Except for the grinding stones, metate and mano, the lithic artifacts and waste flakes were made from local materials. All the cultural data encountered are of the types that fall within previously established patterns for this area of the Colorado River.

This completes the resume section derived from the Lake Mead Recreation Area overview for the National Park Service by Brooks et al (1977).

Schroeder in 1951 had conducted a spot check survey for the National Park Service along the Colorado River from below Davis Dam to the International Border. Fifty-four sites were visited within the area which was to be destroyed by leveling and farming operations. Only one site was recorded that is in an area close to the present study, while a group of three others are located some distance downstream. The first, F:14:7 is described as a petroglyph site away from the River with no associated ceramics. The lower cluster, L:2:8, L:2:7 and L:2:6 are described as being located on the floodplain, near the river bank and in dune area. The prevalent pottery type found in association with them is the Parker Series with some indication of unspecified intrusive ceramic ware. Basically this survey revealed a number of farm and trail camp sites, with an absence of architectural features. "Aside from hammerstones and a few other occasional artifacts such as knives, scrapers, worked sherds, shell fragments, and metates, little material cultural was recovered. The general lack of datable intrusives in the river valley hindered attempts to develop any sort of chronology for the entire area, and the paucity of cultural remains, aside from

ceramics, minimized the possibilities of correlations with neighboring cultural groups to a large extent. In general, however, the data resulting from the survey indicate the prehistoric inhabitants of the lower Colorado River lived much in the same manner as the historic Yuman tribes located on the river" (Schroeder, 1951:50). Schroeder felt that the prehistory of the lower Colorado River peoples could not be determined and tied into the historic groups encountered in the area, until a stratified site was found in the area and excavated, allowing the prehistoric and historic ceramic wares to be correctly assessed.

Archaeological research by the NAS along the Colorado River was conducted for the Bureau of Reclamation through the National Park Service, between 1968 and 1970, and involved a survey along both banks of the river from Davis Dam to the International Border. An individual project within this research, was a pipe line survey in 1970, where the line crossed the river north of Needles on the Fort Mojave Indian Reservation. The pipeline survey was incorporated into the overall project report. Over 60 sites were located on the Arizona side of the Colorado River between Parker and Blythe in the Colorado River Indian Tribes reservation where land was in process of being developed from agriculture. The sherd material from this survey is housed by the Tribal Council and has not been studied in detail as yet.

In 1973 the NAS conducted a preliminary survey for the Bureau of Reclamation, through the National Park Service, along a proposed transmission line on the east side of the Colorado River, which extended from Boulder City, to Davis Dam and Parker, Arizona. The archaeological mitigation of the sites reported in the preliminary survey was completed for the Bureau of Reclamation in 1975/76. The principal site areas are located 4 to 5 miles to the northeast of Bullhead City, Arizona, and on the western slopes of the Black Mountains, with the valley floor of the Colorado River approximately five miles distant. The thirteen sites under mitigation consisted essentially of surface lithic scatters and concentrations of possible quarry material. No depth was found during the

testing of any of these sites. An intensive study was made of the thinning and grinding of lithic edges and the striking platform shapes. "The results of this analysis showed that no consistent method of platform preparation was evident. Some evidence of thinning was present along the edges of some platforms. The platform analysis indicated that the technology of construction was random as compared to a patterned methodology of artifact construction. Measurements of platform size in relation to flake size resulted in no conclusive evidence except that the average platform size decreased with the decrease in flake size" (Larson et al, 1976:24). Pottery sherds were recovered from one site and consist of various types of Lower Colorado Buffware, and possibly Tizon Brownware. Dating of these types of sherds ranges widely extending from 700 or 800 A.D. to post-1900 A.D. so that it was "impossible to pin down a time of manufacture or use of this types of sherdware in this section of the Lower Colorado River region (Larson et al, 1976:31). The lithic materials provided no bases for a chronological setting and with no depth to the sites, no further analysis could be made, except postulations as to use patterning by aboriginal groups.

In 1974 the NAS did a preliminary archaeological survey of a proposed transmission line for the Southern California Edison Company. This survey extended from the Nevada/Utah border through the Eldorado Valley to the Fort Mojave Power Plant and from there about one mile north of the northwestern boundary of the present Fort Mojave survey area to the California border. In the section of this survey adjacent to the study area, no sites were encountered.

In the summer of 1976 the initial inventory of the Fort Mojave area was completed for BLM and the report on this investigation is on file in both the Nevada State Office and the Las Vegas District Office of the BLM. Additional research was conducted in the spring, 1977, by the UNLV Archaeological Field Class, under the supervision of R. H. Brooks, in a small area west of the Fort Mohave project area. At the same time the terraces, the prehistoric and historic sites previously recorded were re-examined.

ETHNOLOGICAL REVIEW OF THE MOJAVE*

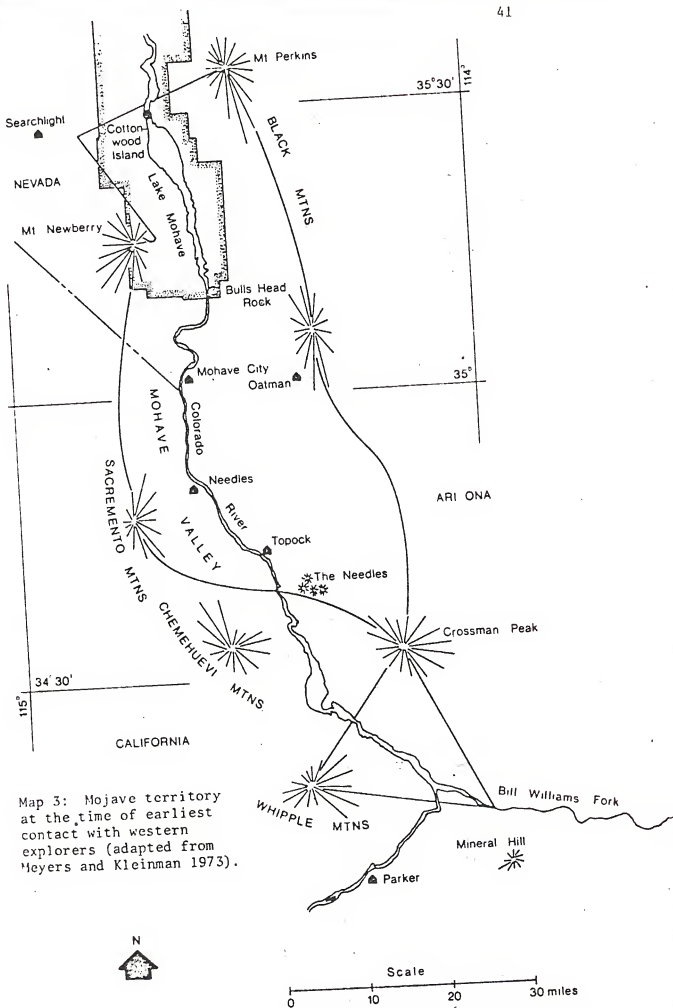
TERRITORY AND ENVIRONMENT

"Mohave Valley, the "core" area described by Kroeber, takes its name from the people who have lived there for at least the past three centuries. The valley's southern limits lie just south of Topock at 114 32' west and 34 40' north, a point known to insurgent Americans as "The Needles" (a series of narrow low pinnacles) and to the Mojave as "huqueamp avi" ("where the battle took place") (cf. Sherer 1965:71). The northern edge of the valley lies near Bulls Head Rock at 35 15' north and 114 34' west (Castetter and Bell 1951). The western border of the valley lies in Nevada and California, its eastern border in Arizona. The entire valley is a natural flood plain, which before extensive dam construction allowed the Colorado River to swell considerably during the spring and early summer. The flood waters played an important part in early Mojave subsistence patterns and will be treated in greater detail later.

A description of the valley itself does not necessarily set the limits of the Mojave occupation range (Map 3). Kelly (1934; also in Stewart 1966) provides a map which extends the Mojave range north along the Colorado, well above old Cottonwood Island (approximately 15 miles north of Davis Dam, 35 40' north). This map, along with other supporting evidence, places the Mojave within the present Recreation Area. Kroeber (1953) claims that the Mojave once occupied Chemehuevi Valley to the south of Mohave Valley proper, which pushes their southern range well below "The Needles."

Restricting the occupation area to Mohave Valley would be too narrow a view

*This section is taken from David E. Ruppert's Lake Mead National Recreation Area: an Ethnographic Overview, March 1976, pp. 6-26; prepared for the National Park Service, Western Archaeological Center, Tucson, Arizona. This manuscript is on file at the NPS Western Archaeological Center, Tucson, Arizona.



in another respect. In lean years, or in times when the Colorado did not flood the valley floor, the Mojave followed an expanded food gathering subsistence pattern. The climate of the area is extremely dry (5 to 10 inches of precipitation per year). If the Colorado did not provide the moisture needed to germinate seeds and to sustain crops over the warm months the Mojave expanded their hunting and gathering range to include areas where grass seed and game were more abundant.

Expeditions of warfare and trade to neighboring groups also often took the Mojave beyond Mohave Valley and the Colorado River; when this is taken into consideration, the "core" area is seen to be surrounded by a large "buffer zone," within which the Mojave felt they had ultimate rights. Respect for this zone was maintained through alliances with some groups and through a constant state of warfare with others.

The Mojave apparently loved travel and pursued it for reasons of warfare, trade and pure pleasure. They did not see themselves as inexorably tied to the valley proper and knew of routes which extended far beyond their homeland. These trails reached as far north as the Shivwits Plateau (well into southern Great Basin territory); as far east as Supai and Hopi; southwest to Gila Bend and Phoenix; south to Yuma and the head of the Gulf of California; west to the Pacific Ocean at San Diego and Ventura, and northwest to Tehachapi and the Tula Lakes of San Joaquin (Kroeber 1953).

EARLY CONTACTS

Early explorers in the Southwest referred to the Mojave in a variety of ways, as each explorer heard something slightly different in response to his question about the name of the tribe. A partial list of tribal names attributed to the Mojave by early explorers includes: Amacave, Amajave, Jamajabs, Tamajabs, Ammachaves and Ammuchabos (Smith 1966). Coues (1900:226) gives a more complete

listing: Amaguagua, Amahuayas, Amochave, Amojaves, Amoxawi, Amuchabas, Hamockhavens, Hamockhave, Hamokiavi, Jamalas, Machaves, Macjave, Mahaos, Hamukhava, Majabos, Majave, Mohave, Mohavi, Mohawa, Hohaw, Mohaoes, Mojaris, Mojaur, Molxares, Moyave, Soyopa, Tamasabes, Wah-muk-a-hah-ve, Yumagas and Yamajab (the list is included here for future research reference). Even the modern name (often written as "Mojave") is a misrepresentation of the name used by the Indians. "Mojave" is the spelling accepted officially by the tribal council, but the original name is "Aha macava," which means "people who live along the river" (aha - "water"; macave - "along or beside") (Sherer 1965:6, 71, Smith 1966). Coues (1900) and Hodge (1917), among others, mistakenly attribute the meaning of this term to the Mojave compound of "hamock" ("three") and "avi" ("mountain"); thus, the early interpretation that "Mojave" meant "three mountains" (referring to the Needles).

Regardless of the tribal names used by explorers, their accounts of early contacts with the tribe are informative. They give us an idea of the extent of Mojave territory just preceding the contact era and some information on how this territory expanded and contracted over time in response to changing relationships with their closest neighbors, to environmental stress and to the advance of white settlement.

1540 - Hernando de Alarcon: The earliest explorer to contact the Mojave may have been Alarcon, a member of Coronado's expedition of 1540. Alarcon, charged with the exploration of the Colorado River delta region, traveled some 200 miles up the river in a small boat before turning east in an effort to join Coronado's party. Smith (1966) claims that this would have put Alarcon in Mojave territory and in certain contact with members of the tribe. Coues (1900) also claims that Alarcon possibly came into contact with the Mojave and Schroeder (1954) traces Alarcon's route well into territory under Mojave influence. Although he made no explicit

reference to the Mojave, Alarcon was told of Indians further upriver by his "Cumana" guides (Yavapai?; cf. Schroeder 1954).

There may be some question as to whether Alarcon actually came into contact with the Mojave, but given that communication often was swift among tribes along the Colorado and that the Mojave were possessed of a penchant for travel and adventure, it seems reasonable to assume that the Mojave were aware of Alarcon's expedition. The question then becomes one of the Mojave discovering Alarcon, rather than one of Alarcon discovering the Mojave (see also Hammond and Rey 1940).

1604 - Don Juan de Onate: The first reference to the Mojave comes from the Onate expedition of 1604-05. Onate set out westward from Sante Fe and marched toward the lower Colorado. There is some disagreement over his actual route (Kroeber 1953; Bolton 1950), but it seems that Onate came into contact with "Amacavas" just above the present site of Parker Dam. After his arrival on the Colorado at the mouth of Bill Williams Fork, Onate traded with the Mojave for foodstuffs (corn, beans and squashes). Leaving the mouth of Williams Fork, the expedition traveled down the Colorado approximately 15 miles (five leagues) to the present site of the Colorado Indian Reservation, where he found "Indians of the same tribe or nation" (Kroeber 1953:3).

Thus, Onate's visit clearly establishes the Mojave in the Mohave Valley over three and a half centuries ago. More importantly, it is clear from his accounts that the Mojave were engaging in horticultural practices in the valley before 1600.

1776 - Fray Francisco Garces: The next major contact with the Mojave was made by the indefatigable Fray Garces in 1776. Garces, while stationed as a priest at San Xavier del Bac Mission near Tucson, ventured west on a number of expeditions

in order to baptize Indians, to record the geographic locations of various tribes and to establish a route of communication between the missions in New Mexico and California. It was on his fifth expedition that Garces came into close contact with the Mojave. His route on this trip took him along the Gila River to its mouth at the Colorado. Turning north, he came upon the Mojave along the Colorado River near the Mohave Range. After baptizing and preaching to a few "Jamajab," Garces was guided to the Mojave Trail (which leads through the Mohave Desert) by "el principal" of the Mojave group he was visiting (Coues 1900:228-29).

Garces' description of the Mojave encountered on this trip is informative (Coues 1900:230-32):

The female sex is the most comely on the river; the male very healthy and robust. The women wear petticoats of the style and cut that the Yumas (wear). The men go entirely naked, and in a country so cold this is well worthy of compassion (the journal is dated February 29). These say that they are very strong; and so I found them to be, especially in enduring hunger and thirst. It is evident that this nation goes on increasing, for as I saw many young lusty fellow, and many more boys, the contrary is experienced in the other nations of the river. There came together to visit me about 20 hundred souls. Abound here certain blankets that they possess and weave furs of rabbits and otters (Coues notes here that these "otters" are probably beaver), brought from the west and northwest, with the people of which parts they keep firm friendship. They have been also intimate friends of the Yumas . . . the enemies that they have are, on the northeast the Yibipais Cuiercomaches (an unknown group of Yavapai); on the east the Jaguallapais (Hualapai); and on the south the Jalchecones (the Halchidoma).

On a return trip to Mojave territory in July of the same year, Garces makes note of additional trade between the Mojave and tribes to the east (Coues 1900:414):

There came with me . . . two Yabipais Jabesua (Havasupai) who brought mantas, leggings, and pieces of cowhide (pedazos de cuero de baca) to trade with the Jamajabs for shells - only for white sea-shells, for no others do they receive in exchange.

The description of trade relations points clearly to Mojave influence far beyond Mojave Valley. Trading extended north to the Paiutes (Chemehuevi?) for

rabbit and beaver furs. Blankets, leggings and cowhide came from the Yavapai to the east and probably from as far as Navajo country in the northeast corner of Arizona.

1851 - Captain Lorenzo Sitgreaves: Not long after the Southwest territories were brought under the control of the United States, the Army dispatched an expedition to explore the new area. Sitgreaves led a party across northeastern Arizona to the Colorado River to the present site of Fort Mohave (Schroeder 1954). After traveling many days through Hualapai territory from Flagstaff, Sitgreaves' party on November 5, 1851, descended the west side of the Black Mountains near the present town of Oatman. On his way to the river he met a party of Indians (one too heavily laden to escape; a trading party, perhaps), but he gives no indication as to the Indians' tribal affinity (Sitgreaves 1853:17). He apparently reached the river without encountering other Indians.

Two days later, after deciding not to follow the Colorado north to explore the mouth of the Virgin River, Sitgreaves followed "well-worn trails" down the river. It was along these trails that large numbers of Mojave gathered to meet his party:

In the evening the camp was crowded with them (Mojave) bringing in for barter small quantities of pumpkins, beans, corn, and in one or two instances, of wheat, which seem to be the staples of their food, for no animals, except a few horses, were seen among them, and the few sheep we had left were the objects of great admiration, especially to the women (Sitgreaves 1853:18).

The beans, pumpkins, corn and wheat, which was introduced by the Spanish, were no doubt signs of a good crop during the preceding summer. At this time of the year these foodstuffs probably represented the Mojave's winter stores, which they relied on to get them through the dry, cold months of winter. Abundant crops during the summer were not always the case, however, as will be explained in greater detail later.

The party first was approached by three Mojave "mounted on fine horses" (Sitgreaves 1853:17). The Mojave kept only a few horses, for purposes of communicating news quickly between villages. Stationed at various places along the river, these horses were the prized possessions of the tribe and were exceptionally well cared for. They were kept in readiness to warn people in the valley in the event of an enemy attack, a call to war on the death of a relative. Non-Indian visitors often remarked on the sacredness of these horses (Fathauer 1954:101).

Sitgreaves (1853:18-19) gives further description of the Mojave themselves:

The appearance of the Mojaves is striking, from their unusual stature, the men averaging at least six feet in height; and their stalwart and athletic figures offered a convincing proof of the excellence of a vegetable diet. Almost all the men were naked, with the exception of the breech-cloth. The hair, cut square across the brows in front, hung in loose braids behind, reaching frequently as low as the waist; occasionally it was matted on the top of the head into a compact mass with mud, for the purpose of destroying the vermin that infest them. The only garment worn by the women was a long fringe of strips of willow-bark wound around the waist, and falling as low as the knees. No covering to the feet was worn by either sex. Their arms are the bows and arrow, the spear and the club. The arrow is formed of two pieces - that to which the barb is attached, of hard wood seven inches long, or one-fourth the entire length; and the other of a light reed that grows profusely along the banks of the river, feathered, as usual, at the extremity. The custom still prevails among them of carrying a firebrand in the hand in cold weather, which is mentioned in the account of Coronado's expedition in 1540, and induced these discoverers to give the river the name Rio del Tizon. (Sitgreaves must be referring to Alarcon's journal. However, it is doubtful that Alarcon was attributing the firebrand to the Mojave; he probably noted its use among the Cocopa or the Yuma.) Their lodges are rectangular, formed of upright posts imbedded in the ground, and rudely thatched on the top and three sides; a portion of the interior altitude being sometimes obtained by excavation.

1853 - Lieutenant A. W. Whipple: In 1853 and 1854 the Army sent an exploration team to survey railway routes across the Southwest. Whipple led the group across northern Arizona, following Bill Williams Fork to the Colorado River.

Whipple provides some information of Mojave social organization. He noted

that there were five "chiefs" of the Mojave and that each chief was the leader of a group of warriors, varying in size from 50 to 100 members. "Lesser captains" were subordinate to these chiefs and commanded small handfuls of men (five in one case cited). Other men chose to remain at home to tend fields and were not of the warrior class (Whipple 1855:17).

Whipple estimated Mojave populations in 1853 at 4,000 including 600 warriors. There is no way to determine the accuracy of this figure. His descriptions of a few examples of Mojave dress, jewelry and weaponry, however, are fairly complete (pp. 33, 51-52). He also mentions the presence of Hopi blankets and a Zuni sash, which the Mojave claimed to have obtained from the Paiutes and the Yavapai (p. 43), giving some indication of trade with these groups. Other aspects of Mojave life are not described, but this probably was due to a lack of "a better means of communication with the people" (Whipple 1855:43).

1858 - Lieutenant Joseph C. Ives: Ives set out to scientifically explore the Colorado River area in 1857. His party, which included geologists, botanists, zoologists, topographers, meteorologists and artists, provided one of the first careful and complete descriptions of an area already traversed by a number of explorers. Ives himself proved to be a careful observer of the Indian groups he encountered. His route took him north along the Colorado River, from its mouth at the Gulf of California to Black Canyon. He then backtracked to Mohave Valley, where he turned east traveling along the southern plateau through Hopi and Navajo territory to Fort Defiance.

Ives provides some information on Mojave subsistence agriculture. From what Ives could determine, the Mojave hunted and fished little and relied almost exclusively on agricultural products, such as corn, wheat and beans:

It is somewhat remarkable that these Indians should thrive so well upon the diet to which they are compelled to adhere. There is no game in the valley. The fish are scarce and of very inferior quality. They subsist almost exclusively upon beans and corn, with occasional watermelons and pumpkins, and are probably as fine a race, physically, as there is in existence. (Ives 1861:73)

The season during which Ives visited the Mojave is significant, in that it documents a reliance on these foods in February. It seems that during good harvest years--years when the Colorado overflowed its banks long enough to grow abundant crops--the store of agricultural products saw the Mojave through the winter. The Mojave did fish, but probably only after the river's floods subsided during the summer. The corn, wheat and beans doubtlessly were supplemented by stores of mesquite or screwbean meal gathered during the fall.

Interestingly, Ives makes special note of the importance of the seasonal flooding of the Colorado River. He goes so far as to suggest that when the river did not overflow, the result was a disastrous famine for the Mojave. Although he fails to make note of his sources, his information probably comes from Olive Oatman's account of the famine of 1853 (cf. Pettid 1968). He also suggests a direct relationship between the floods and the maximum population the valley could support:

The annual overflow of the river enables them (Mojave) to raise, with little labor, an abundant supply of provisions for the year, which they improvidently consume, allowing the future to take care of itself. The failure of a crop is, therefore, an irremediable calamity. During one season, a few years since, the Colorado did not overflow its banks; there were consequently no crops, and great numbers of the Mojave perished from starvation. It is quite possible that such visitations are of periodical occurrence, and are among the means adopted by nature to prevent the population of the valley, as there is no outlet for its expansion, from increasing beyond the capacity of country to sustain it. This number is apt to be overrated. I have discovered that the crowds seen collected at the different points passed during our progress up the river have been composed, to a considerable extent, of the same set of individuals, and suspect that the chiefs in their formal visits have enhanced their apparent state and importance by borrowing recruits from their neighbors. (Ives 1861:73)

Summary: This short description of early contacts with the Mojave is not complete. Others contacted the Mojave, including the famous explorer Jedediah Smith in 1826 (cf. Morgan 1953) and Edward F. Beale, who in 1857 led a party of explorers (equipped with camels) through Mojave territory for the purpose of opening a road from Fort Defiance to the west coast (cf. Smith 1966; Schroeder 1954). Young Olive Oatman, a survivor of a Mojave-Apache (probably Yavapai) attack in 1851, lived among the Mojave as a captive for approximately five years. Her experience provides information which will be used in a later description of Mojave agriculture and warfare. The purpose here has been to provide a summary of those contacts which revealed most about Mojave aboriginal life. Even a limited understanding of the Mojave during the period of these early contacts is useful, as it helps place later ethnographies in a better perspective.

SUBSISTENCE

Agriculture: According to Castetter and Bell (1951), the Mojave cultivated maize, teparies (both the white and yellow varieties), pumpkins (Cucurbita moschata and possibly a variety of C. pepo), gourds (Lagenaria siceraria), tobacco (Nicotiana trigonophylla), wheat and barley, muskmelons, cowpeas (Vigna sinensis) and sunflowers (Helianthus annuus). The wheat, barley, melons and cowpeas were introduced by the Spanish. The Mojave also semi-cultivated seed plants, such as panic grass (Panicum hirticaule), crowfoot grass (Dactyloctenium aegyptium), curlydock (Rumex crispus), barnyard grass (Echinochloa crusgalli) and an unidentified seed plant (Mojave name: ankithi).

Many of the early explorers' accounts refer to Mojave agriculture. Alarcon in 1540 found the major cultigens among the Yuma tribes of the Lower Colorado River to be pumpkins, maize, "a grain-like millet" and bottle gourds. Alarcon himself apparently brought such items as wheat "and other grains," beans and a few Spanish hens and cocks to trade (Castetter and Bell 1951:98-99). Thus, the

Mojave may have been introduced to wheat, and perhaps watermelon, as early as the 1540's. Wheat was a firmly established cultigen among the Halchidoma (a group south of the Mojave until 1828) when Garcés visited that area of the Colorado in 1776. Although the Halchidoma were not on the friendliest terms with the Mojave, there is reason to assume that wheat had become equally well established in the Mohave Valley by this time. Olive Oatman's account of 1853 reports the cropping of "corn, melons and a few garden of vegetables" and suggests that wheat was established as a major crop upon which the Mojave relied heavily. By this time wheat shared the importance of corn and beans in the diet of the Mojave. Others, including Ives (1861) and Sitgreaves (1853), also report on the importance of agriculture among the Mojave.

The flood plains of Mohave Valley provided the arable land needed to cultivate these plants. The Mojave each year would wait for the Colorado to overflow its banks and to deposit its layer of fertile silt over the valley floor. When the water receded in July, seeds were planted in the soft mud with a simple planting stick. In this nutrient rich soil crops grew quickly and easily, without much field maintenance. The remaining summer rains were relied on for additional moisture as the river water receded farther from the fields.

There was no system of canal irrigation to bring water to fields in times of drought or when the river failed to overflow its banks, probably because canals could easily have been destroyed by the flooding from year to year. Fluctuations in the river's peak flooding also may have discouraged canal building, as such fluctuations would threaten damage or destruction of canals more than once during any given season. Individual family groups planted on higher ground in January and relied on pot-carried water until the river again flooded, leaving behind rich soil and ample moisture.

Castetter and Bell (1951:145) provide a yearly schedule for agricultural

and hunting and gathering activities for the tribes along the lower Colorado; this schedule does not specifically describe Mojave activity, but it provides a general pattern, which the Mojave probably followed:

1. First Month - "budding of cottonwood;" equates with late February to early March; a month of relative inactivity because of climatic conditions.
2. Second Month - "month in which willow and mesquite bud; also the windy month;" March; clear new land suitable for planting; greatest dependence on hunting; fishing unimportant.
3. Third Month - "planting of spring;" most of April; if conditions were suitable, some planting was done; otherwise, hunting and fishing were emphasized (this means that when very early, flooding of the river occurred, an early planting sometimes was made); clearing of old lands in preparation for main planting.
4. Fourth Month - "month of wild berries; month when wheat ripens;" latter part of April and early May; taking of river fish.
5. Fifth Month - "month when river reaches its highest peak; breaking-of-the-gourd month;" a somewhat variable period, usually coming in late May and June; before waters receded, stranded fish were taken or those in shallow water were shot; period of scarce food supply; planting was done toward end of period.
6. Six Month - "mesquite beans ripe;" late June and early July; women gathered mesquite pods and pigweed greens; men finished planting.
7. Seventh Month - "hoeing time;" equates with late July and much of August; screwbeans ripe; river fish taken.
8. Eighth Month - "green corn ripe;" most of September; river fish taken.
9. Ninth Month - "harvest month;" late October and early November; busy with gathering crop; lots of dancing and celebrating; rabbits and birds taken.
10. Tenth Month - "frost months;" most of November; building of winter home, which was very important.
11. Eleventh Month - "middle of winter;" December; a period of inactivity although rabbits and birds were hunted.
12. Twelfth Month - "dried cane month;" January and early February; a continued period of inactivity; rabbits and birds hunted; food supply scarce.

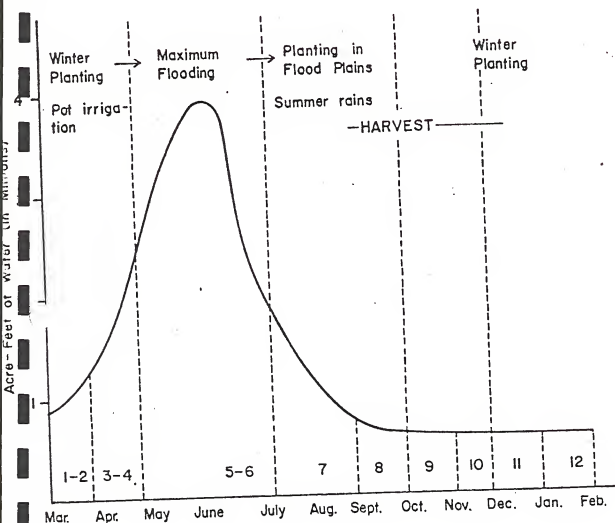


Figure 2: Mojave farming practices correlated with average Colorado River flow (flow records from Castetter and Bell 1951).

Figure 2 correlates these activities with the flooding patterns on the river.

The importance of the flooding of the Colorado cannot be overestimated. The Mojave relied on agricultural products for an estimated 50% of their subsistence (Castetter and Bell 1951:74). If the flood plains were not inundated with water, planting was difficult or impossible; because the surrounding area receives so little annual rainfall (5-10 in.), post-flood water was essential to crop maturation. The importance of flooding is underscored by the celebrations which took place when it occurred. Oatman (1935:124) writes that ". . . it was a season of great rejoicing when the Colorado overflowed, as it was only after overflows that they could rely upon their soil for a crop."

The Mojave relied on agriculture far more than did other tribal groups along the lower Colorado (Cocopa - 30%, Yuma - 40%) (Driver 1957). The combined physical features of Mohave Valley, along with silting and flooding patterns, may account for this. The valley configuration provided extended flooding (1 to 2 miles wide) when the river overflowed. The silt left behind by the floods was essential to Mojave agriculture in a desert environment. Noy-Meir notes (1974:205) that in ". . . most arid soils a large proportion of nutrients in both organic and mineral forms is concentrated in the surface layer (0-5 cm), while the rest of the profile is rather nutrient poor. This is because both decomposition and leaching rates are low. The consequences are that a large part of the nutrient pool is susceptible to loss by erosion and (for nitrogen) volatilization." Thus, these nutrients are the first to wash away in heavy rains and runoff. The Colorado River silt carried these soil nutrients and deposited them in the river's flood plains. Mohave Valley's wide flood plains allowed long shallow flooding and deep renewed silting from year to year, encouraging unusually rapid crop growth and good yields with

with minimum maintenance. Mojave dependence on agriculture, therefore, was fostered by the environment in which they lived.

Land was owned privately or was claimed by specific groups living on or near the land. Landmarks designating family garden plots or a group's larger agricultural tract often were wiped out by annual flooding, however, resulting in quarrels over land ownership. A ritual tug-of-war between opposing individuals or groups provided a solution. Kroeber (1925:744-45) describes the contest:

. . . One man was surrounded by his friends, who tried to shove or drag him across the disputed territory, whereas their opponents struggled to carry a champion of theirs to the farthest end of the land of the aggressors. In this scuffle legs were sometimes broken and the human footballs nearly crushed and pulled to death. The stake of the contest may sometimes have been not only the stretch first in dispute but the entire arable holdings of both contestants.

If the losers were dissatisfied, they reappeared next morning at their asserted boundary, armed with willow poles a couple of inches thick and 5 or 6 feet long. Each man held a shorter stick in his left hand. The victors met them, and a stick fight, chetmana'ak, ensued, which might last for hours. The contestants beat each other, but no one was killed, say the Mohave, but men sometimes died afterwards, especially when they fought long on a summer's day and maggots bred in the wounds. The object of each party was to drive the other back across the disputed tract, whereupon title to it was definitely established.

Wild Resources: The Mojave relied upon a wide variety of wild plants to supplement their agricultural produce. Fishing was important just after the floods along the river receded, leaving sloughs with trapped fish. The hunting of small game, such as birds and rabbits, took place throughout the year, while larger game, such as deer and bighorn sheep, occupied the men during the winter (Smith 1966; Steward 1947, 1957; Castetter and Bell 1951).

Wild Plants: The mesquite bean was the most important wild food gathered by the Mojave. Two varieties of mesquite were gathered: screwbean (*Prosopis pubescens*) and the honey-bean mesquite (*P. juliflora*). Mesquite beans were harvested in late June, the screwbean in August. Women did most of the gathering of mesquite

and other plants, sometimes ranging far from camp or village after the mesquite nearby was harvested. Trees normally belonged to the owner of the land on which they were found and permission from the owner was required to gather mesquite on another man's land (Smith 1966; Castetter and Bell 1951).

Mesquite meal was made by drying the bean on housetops before crushing it into a flour with wooden or stone mortars. The meal sometimes was eaten raw (Kroeber 1925). Cakes were made by adding water to the meal and baking the dough on hot stones. These sometimes were stored for later use or were taken on long journeys as a ready food supply. Raw beans were stored in rooftop arrowweed willow baskets or on short platforms. Fresh screwbeans sometimes were cured in large pits, 15 ft. across and 4 or 5 ft. deep, lined with arrowweed; water was sprinkled on the beans, which turned brown and sweet and were ready to eat in about a month (Kroeber 1925). A mildly intoxicating drink was made from the honey bean and the screwbean by steeping the crushed pods in water (Castetter and Bell 1951).

After the mesquite bean, wild seed plants proved the most useful to the Mojave. A list of seed plants utilized by the Mojave, a modification of Castetter and Bell's (1951) list for the entire lower Colorado River region, appears below:

1. Quail brush or lenscale (Atriplex lentiformis)
2. Desert Saltbush (A. polycarpa)
3. Careless weed, blede, redroot, pigweed, love-lies-bleeding, quelite (Amaranthus palmeri, A. caudatus)
4. Barnyard grass (Echinochloa crusgalli)
5. Panic grass (Panicum hirticaule)
6. Tansy mustard (Descurainia obtusa)
7. Sprangle-top (Leptochloa viscida)
8. Iodine bush (Allenrolfea occidentalis)
9. Flat-edge, chufs, yellow nut grass (Cyperus ferax)
10. Ammannia (Ammannia coccinea)
11. Evening primrose (Oenothera brevipes)
12. Sage, chia (Salvia columbariae)
13. Ironwood (Olneya tesota)
14. Yellow paloverde, Blue paloverde (Cercidium microphyllum, C. floridum)

15. Sunflower (Helianthus annuus)
16. Acorns (Quercus turbinella)
17. Aurlydock (Rumex crispus)
18. Seven unidentified plants are listed. The Mojave names are:
Koskwaka, Samkoatkx, Xam ats pats, kwats kul ka, Apan, Ex ham
Sekel.

The seeds were prepared in various ways; some were dried into flour, some were boiled and some were eaten raw. Beverages were made by steeping the seeds in water.

The Mojave also gathered roots and tubers. Cattail (Typha latifolia, T. angustifolia) was sought for its roots and pollen. The tubers of the arrowweed plant (Sagittaria simplex) reportedly were used by the Mojave as early as 1878. The desert lily (Hesperocallis undulata) occurs in the area and probably was eaten by the Mojave, as it was gathered by tribes farther south along the Colorado. The hog potato (Hoffmanseggia densiflora) and an unidentified plant known to the Mojave as slalyk also were eaten.

Some plants were used as greens and the fruit of others was gathered at certain times of the year. A list of these plants appears below:

Greens

1. Careless weed (Amaranthus palmeri)
2. Sow thistle (Sonchus asper)
3. Spiny aster (Aster spinosus)
4. Thelpodium (Baccharis glutinosa)
5. Goosefoot (Chenopodium fremontii, C. murale)
6. Dudley or Goodding willow (Salix gooddingii)
7. Curlydock (Rumex crispus)

Fruit

1. Wolfberry (Lucium fremontii, L. exsertum, L. andersonii)
2. Lotebush (Condalia lycioides)
3. Cholla (Opuntia echinocarpa)
4. Pricklypear (Opuntia engelmannii)
5. Mohave yucca (Yucca schidigera)
6. Ground cherry (Physalis fendleri)
7. Kukik (Mojave name - specific plant type unknown)

Game: Small game was hunted throughout the year; larger game was hunted during the winter. Stewart (1947) reports that hunting parties consisted of from 10 to 12 men. These parties normally had no officially sanctioned hunt leader. The Mojave hunted with bow and arrow or with a throwing stick. The bow and arrow were used for larger game, such as mountain sheep (Ovis canadensis)

and the black-tailed deer (Odocoileus hemionus); the curved throwing stick was used to kill the three varieties of rabbit in the area (Lepus californicus eremicus and L. californicus deserticola, L. alleni alleni, Sylvilagus auduboni arizonae). The black-tailed jackrabbit (L. californicus) was considered poisonous. Rabbit drives, in which the animals were chased into nets made of vegetable fiber, were practiced and rabbit traps also were used.

Deer were hunted between the months of July and October and, occasionally, in the spring. Only certain men hunted deer. The dream life was important to the Mojave and only those who dreamed of hunting early in life were given the title of sharpshooter and allowed to hunt deer. Deer meat and hide often were obtained from Hualapai hunters, who accepted agricultural products in return. A deer brought in by a Mojave hunter could not be eaten by the hunter; he received vegetable goods from others in return for the meat.

The Mojave also hunted and ate the ground squirrel, chipmunk, raccoon, badger, gopher, muskrat, chuckwalla, beaver, rat, fox and coyote. Fox and coyotes were taken in baited dead falls. Rats were trapped in snares with pumpkin seeds as bait. Fish nets were thrown over dams to catch beaver. Wildcat, mountain lion, bobcat, skunk and porcupine also were trapped, but were not eaten, as they were valued for their hides.

Quail were trapped in nets, snares and box traps. Quail eggs also were eaten. Ducks and mudhens were hunted and eaten, while eagles, buzzards, crows, pelicans, cranes, blackbirds, roadrunners, hawks and owls were hunted for their feathers and were not eaten (Stewart 1947).

Castetter and Bell (1951) note that hunting was a relatively unimportant activity for the Mojave and that the lack of ritual activity related to hunting reflects its lack of importance in Mojave subsistence. There is other evidence that hunting occupied the Mojave less than it did other Yuman groups on the lower

Colorado, but to rely on the lack of ritual activity as an indicator of this is risky. For example, there seems to have been little ritual connected with agricultural practices, yet agricultural products may have constituted more than half of the Mojave's yearly subsistence.

Fish: Fish were plentiful in the Colorado during the flood season and those trapped in sloughs as the water began to recede were easily caught with limited equipment. As in hunting, success in the dream life was necessary for successful fishing. Stewart (1957:199) notes that "the expert fishers were men who had dreamed properly, upon whom the culture hero Mastamho had conferred in dreams the power for success in piscatorial activities. One of my informants said, 'When the man that dreams catches hold of a fish, the fish won't move.'" The power to catch fish, however, could be given to others who had dreams and fishing was pursued actively by anyone who wished to try his luck.

Fish caught and eaten included humpbacked sucker (Xyrauchen texanus, a fish approximately 18 to 24 inches long), bony tail (Gila elegans), mullet (Mugil cephalus) and bull salmon (Ptychocheilus lucius, a three-foot minnow).

Stewart (1957) lists a number of techniques used by the Mojave to catch fish. These include:

1. Ihuly: A seine or drag net, approximately 25 feet long and 8 feet high, was made of tough cowpea fibers and weighted with stones attached to arrowweed sticks placed vertically through it. Poles were attached to each end of the net and two men dragged it through the water.
2. Suak: A net six feet in length and four feet deep, the suak was attached to two poles and dipped into the water by one man. Another man beat the water with sticks, driving the fish toward the net. The net man brought the sticks together, thus trapping fish in the closed net.
3. Acisayul: A small suak used in shallow water, this device required no beater. The net man merely watched for fish swimming near the net.

4. Kwithata: The kwithata was a fish scoop, 5 feet long and 18 inches wide, made of willow. A handle attached to the willow allowed one man to manage the scoop. It was used only in sloughs and lagoons.
5. Acuckpe: This brush "fence" or weir, 10 to 15 feet in length, was constructed of willow twigs and poles set in the mud. One man with a dip net (suak) stationed himself in the weir and scooped out the fish when they became trapped.
6. Acinuya: A semi-circular weir baited with pumpkin seeds, this trap was constructed much like the acucukpe, but the procedure for catching the fish differed. The fisherman, after baiting the weir, would leave for several hours. If the willow sticks set in the mud were moving when he returned, he merely scooped up the fish with a suak.
7. Hook and line: A Mojave occasionally used a barrel cactus spine (heated and bent into shape) for a hook, in conjunction with a willow pole and cowpea fiber line. Bait included worms, grasshoppers and small fish. Stewart (1957:201) doubts that this method was used commonly by the Mojave, as fish could more easily be caught with traps and scoops.
8. Bow and arrow: The bow and arrow rarely were used to fish and then only by old men in sloughs and lagoons.

Fish was prepared and cooked by men, as was meat. Women were responsible for cooking agricultural products and wild seeds. Fish was eaten fresh and normally was prepared by broiling on hot coals or by boiling in a stew to which cornmeal was added.

RELATIONS WITH NEIGHBORING GROUPS

Warfare: Discussion of warfare is prominent in the Mojave literature. The Mojave warred on neighboring groups with frequency and were regarded by early white settlers as extremely hostile. A system of alliances made the Mojave permanent friends with the Yuma, Havasupai, Hualapai and Yavapai. Among the bitter enemies of the Mojave were the Maricopa, who lived along the Gila River; the Halchidoma, who were expelled by the Mojave from their territory on the Colorado River south of the Needles, and the Cocopah. There are reports of fighting with the Chemehuevi, a Southern Paiute group which for a time occupied

Chemehuevi Valley and, later, Cottonwood Island (now submerged under Lake Mohave) north of Mohave Valley; the Southern Paiute, probably the Las Vegas and/or Moapa Paiute; the Diegueno to the southwest in California, and the Pima, the Gila River irrigation farmers to the southeast.

As in all other aspects of Mojave life, dreams played an important role in warfare. Potential warriors dreamed of hawks, the morning star, dust storms or of fighting large animals. Young men who claimed to have dreamed properly were quizzed about their dreams by elder warriors. If the young men correctly recounted their dreams, they were said to have "dream power" and became good prospects as "braves". Members of other Mojave institutions also received their "powers" from dreams. Shamanistic powers, for example, were conferred on those who had "dreamed properly." Women who danced at festive occasions and who supported men in war parties through performances of certain dances also received their power from dreams. In short, dreaming provided one's credentials for membership in all important Mojave institutions. Fathauer (1954) claims that dreaming is the very foundation of Mojave social life and that proper dreaming provides a selection for or against individuals with specific personality traits. Young men who "acted mean" or were aggressive in their dealings with others became members of the warrior class. Dreaming, then, can be seen as a means of ritually institutionalizing and reinforcing certain kinds of social behavior. In the case of warriors, dreaming reinforced and sanctioned belligerence, aggressiveness and bravery in fighting.

Mojave fighting methods stressed close-in hand-to-hand combat. Bows and arrows were used, but bowmen were not "proper dreamers" and did not belong to the warrior class (Fathauer 1954). The object in battle was to draw the enemy close so that a mallet-headed war club, the halyahwai, or the tokyeta, a straight club of mesquite wood (Kroeber 1925:751), could be used to smash his skull.

When an opponent fell, his head sometimes was removed so that scalpers could claim their prize at their leisure after the battle. Scalpers belonged to their own class and, like warriors, received their power from dreams. Stewart (1947) notes that a few women sometimes accompanied men in war parties. They did little fighting, however, except in self-defense. Their primary function was to help increase morale among the young warriors.

War parties of 50 to 60 men commonly were formed and raids were planned well in advance. These expeditions were carried out against traditional enemies, but a few skirmishes engages Hualapai allies to the east and the usually friendly Chemehuevi, who settled along the Colorado south of Mohave Valley. Oatman (1935:156-157), who for a time was a captive of the Mojave, describes the extensive and well-laid plans for a raid on the Cocoph near the Colorado delta. Large expeditions also were planned. The Mojave mustered their own warriors with those of neighboring allies, such as the Yavapai and the Yuma, to war against the Maricopa, their traditional enemy. Kroeber (1925:753) recounts the last great war expeditions against the Maricopa in 1857 or 1858. His narrative not only illustrates the size of such a war party, but also gives a notion of the extent of Mojave alliances and the general Yuman style of fighting:

. . . The Mohave, in a party whose numbers are not exactly known but estimated by themselves as about 200, were joined at Avi-kwa-hasala by 82 Yuma and a considerable body of Yavapai and a contingent from a more remote tribe whom the Mohave call Yavapaya-hwachacha, "traveling" or "nomadic Yavapai" and the description of whose appearance and manners exactly fits the Apache. The Maricopa summoned the Hatpa or Pima, "a large tribe of many villages," as the Mohave found to their cost. The battle took place at Avi-vava, in an open plain. The Apache fought fiercely for a time but fled when things turned against them, and escaped without a fatality. The Yavapai followed but lost seven. The majority of warriors of these tribes were probably mounted, whereas the river nations fought on foot. A part of the Mohave and all the Yuma were surrounded and exterminated after a most determined hand-to-hand fight. Sixty Mohave fell and 80 to 82 Yuma - Mumara-va'acha and Kwasanya being the only survivors of the latter. The Yuma

refused to flee and stood in a dense mass. When the foe charged, they attempted to grasp and drag him into their body where he was hacked to pieces with great knives.

Theories attempting to explain Mojave warfare are found throughout the literature. A few authors suggest an economic motivation for fighting. Kroeber (1925), for instance, draws attention to the taking of women and children after a victorious battle. These captives became a source of domestic labor in Mojave villages or were sold as slaves to other groups. In general discussion of changes in Yuman warfare, Dobyns and co-authors (1957) espouse the hypothesis that raiding for slaves was important. They also suggest that raiding for horses became a major motive for war after Spanish and American contact. These authors also claim that Stewart (1947) provides evidence that the Mojave raided Maricopa camps for agricultural products, recounting an episode in which the Mojave "killed a few people, and ran away with corn, watermelons. . .," as well as horses (Dobyns et al 1957:49).

Fathauer (1954:110) provides a different view. Warfare for the Mojave, he claims, "was largely non-instrumental: it was an end in itself." Mojave warfare was stimulated by tribal mythology and functioned to reinforce elements of prestige and bravery. Fathauer nods to the economic theories by stating that there may have been a need earlier in Mojave occupation along the Colorado to defend the fertile Mohave Valley from the intrusions of neighboring groups. Outside of this, he rejects economic explanations and relies on psychological and sociological factors.

Kroeber (1925) tacitly supports this view by suggesting that the Mojave fought for pleasure and for sport. Non-economic explanations also are advanced by Forde (1931) for warfare among the Yuma, frequent allies of the Mojave. Forde writes that "fighting was not justified merely as a virile pursuit, nor was economic need adduced as a factor: warfare to the Yuma possessed a strong

mystical value as the means whereby the spiritual power of the entire tribe was enhanced and at the same time demonstrated" (in Kroeber and Kroeber 1973:2). Although Dobyns and co-authors (1957) suggest that Stewart (1947) gives evidence for economic motivations for Mojave warfare, Stewart himself (1947:431) relies on the non-economic psychological explanation. He describes the Mojave as constant aggressors, uninterested in plunder, and claims that territorial aggrandizement was not a motivating factor.

Both the economic and the psychological explanations have their appeal. There can be little doubt that the Mojave organized war parties with specific reasons in mind, such as the enhancement of personal prestige among young warriors. At times, though perhaps infrequently, they stole foodstuffs and took captives for labor and to sell as slaves. Mojave warfare was incontestably a major sociological fact of life, in that it was institutionalized in a warrior class (kwunamis), which derived its authority through the "proper dreaming" of its members. So serious examiner of the historical record can dispute the conclusion that warfare among the Mojave was a complex blend of psychological, sociological and economic factors, much as it is in our own society.

This report by Rupert is a brief summary of the ethnological information on the peoples who occupied the subject area at the time of contact. He has also included historical information derived from the first Europeans who entered this section of the Colorado River, who encountered these groups and recorded their impressions. At the time that Fort Mojave was built in the late 1850's the Mojave Indians still occupied this area.

HISTORICAL SUMMARY

Dennis Casebier, who has researched the Mojave or Government Road extensively and published on his data, was requested by ARC to serve as a consultant on this project. On December 16, 1977, he accompanied ARC personnel and S. Rolf, Las Vegas District Office of the BLM, to the study area, and located the areas that he thought were pertinent to a consideration of the Old Government Road, and its historic significance.

One question being raised was whether or not the historic Mojave Road (frequently called Old Government Road today but hereafter referred to as Mojave Road or Trail) exists on the BLM lands in Clark County, Nevada, adjacent to the Fort Mojave Indian Reservation, presently being considered for transfer to the State of Nevada. The answer is yes... there is no question but that the Mojave Road had to cross the lands under consideration to reach the Fort Mojave ferry crossing. There are at least two alignments of the old route through the area that are visible today.

The alignments which are of interest to the subject lands, are on the east side of the Dead Mountains and east of the pass between the Dead and Newberry Mountains. They represent the various approaches that were worked out by explorers and travelers over a hundred years ago to negotiate the ten or twelve miles between the Dead Mountains and the crossing of the Colorado River...The route considered to be the oldest entered the valley of the Colorado from the west by turning the north end of the Dead Mountains and heading southeast along the northeastern corner of those mountains until the large east-west trending wash was encountered in Sec. 23 T33S R65E at which point the route turned more nearly east away from the Dead Mountains and followed this broad wash down into the Colorado River bottom and on to the point where the Fort Mojave ferry crossed the river. This is directly across from the site of old Fort Mojave (which is in Arizona). This route is traveled some today and apparently has been at least lightly used by vehicle traffic for many years...

The second alignment...is a slightly later route in point of time. When Hardyville was established on the Colorado River in 1864 (on the Arizona side about two miles below the present Bullhead City) the route of the Mojave Road after leaving the pass through the Dead and Newberry Mountains was changed to accommodate this important new community. In fact, William H. Hardy built a new road that would go directly to the Hardyville ferry. This new road left the pass more directly east toward the river and then once the river was reached it followed along close to the bank to the point opposite Hardyville. This road was maintained by the commercial interests in Hardyville and therefore it tended to be in better condition than the earlier roads. It was natural for the people of Fort Mojave to make use of this improved

road by developing a straight connecting road between the new Hardyville cutoff and the Fort Mojave ferry. The intersection for this connecting road begins in Sec. 1 of T33S R65E (very near BM 1406) and runs pretty directly SE toward the Mojave ferry site.

It is likely that a number of variations to the alignments...existed over the years. The terrain between the Dead and Newberry Mountains pass and the Colorado River is not particularly rough giving teamsters and other travelers some latitude in the choice of specific route. A bad washout on one route could cause the exact course followed to be changed slightly. Or, when a particular route became rough, the teamsters would "move over a ways" or maybe even "go down another ridge or draw." Evidence of this kind of meandering is seen at other places where the terrain would permit along the Mojave Road. In fact, it is a common characteristic of other early wagon roads in the West where the country adjacent to the road was unsettled.

A second question being raised...was to evaluate the historical importance of this area. To my mind the general area of the Fort Mojave Crossing of the Colorado River is one of the most important and significant historical localities in all of southern Nevada. This was the second place on the treacherous "Rio Colorado of the West" where a ferry was established to carry the white man and his trains over the river (Yuma was first). It is the very heart of the country occupied by the great Mohave Nation in recent prehistoric and early historic times. They lived right there in the valley, both in and out of the area under study....the sites are there, they are simply covered by river deposits. Once excavation and development is commenced on this site it will be discovered that a great nation of aboriginal Americans lived here. But then it will be too late to save the remains...

Continuing with a discussion of the historical importance of the area. The existence of the great Mohave Nation here---with their frequent surplus of supplies resulting from their agricultural use of the Colorado Valley---attracted virtually all the early white travelers who passed through this part of the United States. In 1976 the Spanish Padre Fr. Francisco Garces was here. Of the greatest importance to America is the fact that the first American to reach California overland---Jedediah Strong Smith---made his trek by way of the Mohave Villages (in 1826) and what later became the Fort Mojave crossing of the Colorado. He then transited the California desert by way of the Mohave Indian Trail. The massacre of half of Smith's party by the Mohaves in 1827 took place in this vicinity when he was here on his second trip to California. In the years after Smith's passing other American mountain men and adventurers used this trail to reach Mexican California---Kit Carson, William Wolfskill, and many other famous men used the route. To them the Mohave Villages (part of which were on the subject lands) and this comparative safe crossing of the Rio Colorado was a widely known and significant location in the early American West.

Behind the trappers came formal American exploring expeditions. They are too numerous and complicated to be enumerated here. I will mention, however, as a reminder of one of the elements of uniqueness of this trail and the river crossing, that in the years 1857-1861 the well known

camel experiment was conducted by the War Department in New Mexico, Arizona, and California and the future Fort Mojave crossing is where they crossed the Colorado River. Not just once but many times.

...A battle critical to Mohave/white relations took place in the subject lands in March of 1859. Samuel A. Bishop (the man for whom Bishop, California is named) with a small party of frontiersmen had a pitched battle with literally hundreds of Mohaves at the north end of Beaver Lake. This site is located in the lands under consideration (probably in the SE corner of Sec. 17 T33S R66E or Sw corner of Sec. 16 same township and range).

In 1859 the Mohave Indian Trail became an established wagon road and shortly after that a ferry was started at Fort Mojave and maintained there for many years. The impetus for this was, of course, establishment of Fort Mojave just across the river in that year. The fort was maintained there until 1890 (with a two-year interruption during the Civil War), at which time it became an Indian school. The existence of this ferry (the only one above Yuma when it was established) made this crossing a focal point for wagon travel throughout this part of the United States.

In 1863 Arizona Territory was created by Congress. The next year the capital of the new territory was established in the mountains of central Arizona and named Prescott. A 160-mile road was laid out between Fort Mojave and Prescott and immediately the Mojave Road became one of the principal lifelines to the struggling new territory. In the years that followed thousands of wagons, an uncounted number of soldiers, great herds of cattle and sheep, civilians of all classes, government officials, and the United States mails, rolled back and forth between California and Arizona. The Mojave Road and the Fort Mojave and Hardyville crossings of the Colorado became objects of importance on the maps of the United States. (Casebier, 1977:1-4).

The complete data on the Mojave Trail, its subsequent history, and related information is discussed in a series of books by Dennis G. Casebier: Carleon's Pah-Ute Campaign, the Battle at Camp Cady, Camp Rock Spring California, Fort Pah-Ute California, The Mojave Road, and The Mojave Road in Newspapers. In the addendum to this report is a historical background for the Mojave Trail, prepared by Phillip I. Earl, Nevada Historical Society, Reno, Nevada.

Several records exist concerning Indian occupation of the project area in relatively recent times. In 1932, Swanholm, a surveyor doing realignments for a township, recorded as two survey points buildings which he designated as "old Indian cabins". He does not state how he knew that they were Indian

cabins. He does say in his general description "there are no settlers within the township. Adjacent to the lowlands in section 16, a small area has been cleared and cultivated in past years and is now being used as an experimental date farm. It is the only occupied land lying outside the Mojave Indian Reservation which embraces most of the lowland area along the river. Most of the arable land is found within the bottom lands, which are subject to overflow during the periodic flood stages of the river, and for that reason, have not been extensively cultivated" (Swanholm, 1932:35).

There is a 1940 report on the so-called Fort Mojave tract, on the Nevada side of the Colorado River, apparently conducted for the Bureau of Reclamation on the soils, water and climatic conditions. In this report there is a reference stating that: "Mike Tobin, a Chemehuevi Indian, who moved off the reservation some 30 years ago following a disagreement with the Indian Service Officials, filed an application for 160 acres in Sections 16 and 17, T. 33S., R. 66E., Mount Diablo Meridian, but his entry has not been allowed. Although he has continued living on this land, he has done nothing to develop the land other than to periodically burn the arrowweed and mesquite"(Anonymous, 1940:15). The Indian cabin shown in Swanholm's 1932 map borders on Sections 16 and 17 and it appears that this is the Mike Tobin cabin referred to in the 1940 report.

It is interesting that his possible Tobin cabin is adjacent to the presently privately owned land in the Fort Mojave region, where the historic cemetery is located. During the second phase of the inventory a local informant told ARC staff that he had heard that an Indian or two had also been buried in the cemetery as well as a non-Indian couple. When the cemetery was checked during the first phase of the inventory, two wooden markers

still existed which are illegible. There are indications that there are more burials, within the cemetery area, although markers no longer exist.

A resurvey by Sibley in 1961 of the lands within T. 33S, R. 66E. on the west side of the Colorado River, recorded that: "There is one old Indian settler in sec. 9, near the $\frac{1}{4}$ sec. cor. of secs. 8 and 9" (Sibley, 1961:15). There is no indication if this was Mike Tobin or another Indian settler. This is not the locale previously recorded for Tobin in the 1940 report. It could be the other Indian cabin to which Swanholm referred in 1932 and located on his map at the western line of Section 9. This is no way of confirming this assumption on the basis of land claims, as in all probability no official records have been filed.

In phase one of the inventory of the Fort Mojave region, a number of historic sites were recorded and photographed on the second terrace. Some of these are relatively late in time, post World War II, and others appear much earlier. Some of the material observed in the historic debris associated with NAS site numbers 260K1402, 1403, 1404, 1411, and 1421, included data that appear to date before the turn of the century based on the presence of hole-in-top cans. This type of can was manufactured only until 1900 A.D. Other possible indications of earlier historic use are the fragmentary bottle necks without seams and pieces of purple stained glass.

Dennis Casebier provided a copy of a map of the military reservation at Camp Mojave, Arizona, made by George Wheeler in 1869. This map included areas on the west side of the Colorado River in the flood plain and several locales are shown that are labeled "rancherias". This term was used to refer to small Indian encampments and probably represents Mojave Indian settlements located in the flood plains in the vicinity of Fort Mojave.

ENVIRONMENTAL BACKGROUND

Physical Factors. The lands under consideration in the Fort Mohave area are located in the Sonora Desert section of the Basin and Range physiographic province within the Colorado River Valley. This area is generally bounded on the north by the Newberry Mountains, on the west and southwest by the foothills of the Dead Mountains, on the south by the flood plain of the Fort Mojave Indian Reservation, and on the east by the channel of the Colorado River, which has been controlled and stabilized by the Bureau of Reclamation with a series of dikes and levees. The eastern third of the area is located on the remnant of the Colorado River flood plain that existed prior to the channelization of the river. This area is generally flat with sandy soils supporting dense, phreatophytic vegetation. West of the flood plain, the terrain rises on the alluvial fans of the Newberry and Dead Mountains. This alluvium supports a sparse, desert shrub vegetation (BLM Environmental Statement, 1975:23).

The climate of this project area is described as "typical of the southern Great Basin arid environment. The four seasons are well defined. The summers are hot with daily temperatures commonly reaching above 100°F. The daily summer minimums, especially in the valleys range between the high 60's and low 70's. This nightly drop is created by cooler mountain air draining downward from the higher elevation, and active night radiation cooling. Winters are mild and short with average temperatures falling in the low 70's. Occasionally winter temperatures fall below freezing. Summer precipitation generally occurs as a result of storm movement originating in the Gulf of California or the Gulf of Mexico. "The summer months bring violent thunder storms which form quickly and deliver their rain in sudden showers, causing occasional floods and much erosion" (Longwell et al., 1965:58).

Approximately 50 percent of the annual precipitation occurs during the winter months, December through February. During the five months, May through September, 25 percent of the annual precipitation is received. Most of this comes during July and August from a few short-duration, high intensity convective storms (BLM Environmental Statement, 1975:23).

During the time period of the archaeological survey it was noted that the air could be quite still in the project area with a high level of humidity created by convective storms in adjacent mountain regions. The nightly drop in temperature expectable in other parts of the southern Great Basin, did not occur in the arroyos or river flood plain area, although on the upper alluvial fan slopes there was a nightly cooling accompanied by slight breezes.

The vegetation on the flood plain is typical of river bottom areas along many southwestern rivers and consists mainly of arrowweed, salt cedar, mesquite, willow, with occasional cottonwood, smoke tree, cattail, saltbrush, acacia and pigmy cedar. A few annual grasses grow in the area; these are usually found where the overstory has been burned or where the water table is near the surface (BLM Environmental Statement, 1975:24).

The vegetation of the study area is a floristic blend of both the Mojave and Sonoran desert plants. Many of the flora encountered are found commonly in both regions, but occasional Sonoran plants have crossed the Colorado River and established viable populations. Of especial interest are the ocotillo (Fouquieria splendens) and the smoke tree (Dalea spinosa) that were observed to occur within the boundaries of the study area. This region is the only locale where the smoke tree occurs in the State of Nevada (Bradley, 1966). The most common specimens observed in the riverine environment and the flood plain were arrowweed (Pluchea sericea) and the introduced salt-cedar or tamarisk (Tamarix pentandra). The edible mesquites, honey bean (Prosopis juliflora) and screw bean (Prosopis pubescens) were noted growing in thick stands in some of the survey areas in the flood plain. The introduced tamarisk has already invaded the mesquite forest and is crowding these native plants.

"The alluvium supports a desert shrub vegetation, typical of alluvial fans in the Mohave Desert...Annual grasses and weeds appear when precipitation occurs and conditions are ideal" (BLM Environmental Statement, 1975:24). The plant types common to the alluvial fans include creosote (Larrea divaricata), salt brush (Atropis sps.), burro bush (Franeria dumosa), cat's claw (Acacia greggii), Jimson weed (Datura meteloides), desert spiny herb (Oxytheca sps.) and snakeweed (Gutierrezia sarothae). Other plants that were observed are the ground cherry (Physalis crassifolia), coyote melon (Cucurbita foesitissima), Mojave yucca (Yucca schidigera), and milkweed (Asclepias subulata). Various cacti located within the area include barrel cactus (Echinocereus engelmanni), buckthorn cholla (Opuntia acanthocarpa), jumping cholla (O. bigelovii) and beavertail (O. basilaris). Many hardy specimens of pencil cactus (Opuntia ramosissima) appear to have reached an optimal height of 15 cm.

The fauna that inhabit this project area include fish, amphibians, reptiles, mammals and birds. The amphibians and reptiles consist of numerous lizards and snakes and other poikilotherms. The bird species found inhabit the area on both a year round and seasonal basis and it is a major migration stop for numerous species.

Birds and waterfowl may be found primarily in the phreatophytic vegetation of the flood plain. Quail, hawks, vultures, mourning dove, owls, and numerous water birds and shore birds utilize the dense vegetation along the river. The sloughs and back water area inside the river levee system provides limited habitat for ducks, waterfowl and shore birds. Several species of snakes, lizards, frogs, toads and even turtles inhabit the subject area (BLM Environmental Statement, 1975:49).

Mammals that frequent the area include shrews (family Soricidae), jackrabbit (Lepus californicus), desert cottontail (Sylvilagus auduboni), Yuma antelope squirrel (Ammospermophilus harrisi), many

species of mice (families Heteromyidae and Cricetidae), coyote (Canis latrans), desert kit fox (Vulpes macrotis), gray fox (Urocyon cinereoargenteus), badger (Taxidea taxus), bobcat (Lynx rufus), and bighorn sheep (Ovis canadensis) (Blair, et al., 1968).

Population size of the various faunal types is related to the environmental factors. In this area faunal population sizes are greater along the Colorado River in the flood plain and in the mountains rather than on the alluvial fan slopes. It should be noted that migration is probable between both environments by several species throughout the year.

In general, the alluvial fan area with the desert shrub vegetation, provides habitat primarily for a small population of nocturnal desert wildlife, which would include small rodents, lizards, and insects. Because of the arid nature of the area, little wildlife is seen in daylight hours, with the exception of perhaps lizards. The flood plain provides more food, cover and water for wildlife habitat, thus producing a more varied population (BLM Environmental Statement, 1975:49).

Geology - The primary geological features of the area can be divided into two parts: (1) consolidated rocks; and (2) alluvium. The consolidated rocks are a complex of Precambrian igneous and metamorphic rocks consisting of gneiss, schist, and granite, which form the Newberry and Dead Mountains to the north and southwest of the Fort Mojave area. Some Tertiary sedimentary rocks consisting of non-marine clastics in some places interbedded with flow and pyroclastic rocks, and fresh water limestone are also formed.... All unconsolidated to semiconsolidated alluvial deposits cover most of the area, including the flood plain. This alluvium probably ranges in age from Pliocene to Recent, with most of the exposed material to be of Quaternary age. The alluvial aprons of the Colorado River Valley are underlain by lenticular beds of gravel, sand, silt, clay eroded from adjacent mountains. Coarse alluvial materials are contained in numerous washes cutting the alluvial aprons. Older alluvial terrace deposits, scattered lake deposits, and dissected alluvial fan deposits occur in the Colorado River Valley (BLM Environmental Statement, 1975:29 taken from Rush and Huxel, 1966, which conforms with Longwell et al., 1965).

It was noted during the survey that there is a high incidence of granitic float materials in the upper alluvial fans; in the higher section of the apron, there were a number of low outcroppings of granite boulders. These boulders were thought to be potential site areas, but they proved to be negative archaeologically within the survey sections. The coarse alluvial gravels mentioned in the geological quote from the BLM Environmental Statement include also well-rounded river cobbles that are incorporated in a number of the ancient river terraces identified on the western side of the Colorado River.

The Newberry Mountains, the Dead Mountains and their extensive alluvial fans dominate the landscape geologically in this region. The other major geological feature is the Colorado River basin, itself. In the alluvial fan area sheetwash seems to be the pre-dominant erosional factor, although on the western edge of the project area, close to the San Bernardino County line, California-Nevada border, there is a well-developed major wash in Sections 19 and 24. Intensive survey was conducted along the edges and the banks above this major arroyo because of its site potential.

Soils - The soils of the Fort Mohave area occupy two principal land forms: (1) river flood plain; and (2) alluvial fans. Soils on the nearly level flood plain are stratified, fine loamy sediments, for the most part superimposed in a few places by sand dunes....Joining the flood plain to the west are strongly sloping alluvial fans. The modern drainage system is deeply entrenched in these fans and tends to widen and form deltaic depositional areas where they join the flood plain....In general, the soils are coarse grained, derived mostly from granitic rocks. Depth to restrictive material and slope varies according to position on the fan (BLM Environmental Statement, 1975:24-25).

It was observed during the current survey project that the sand dunes are more extensive than stated in the BLM report, quoted above, particularly in the northern section of the flood plain where it abuts against the second river terrace.

Topography - Topography can best be described as two major features: (1) the flood plain below the 510' contour line; and (2) the alluvial fan above 510' elevation....The alluvial fan starts at the 510' elevation at the west edge of the flood plain and rises in elevation westward up to the lower alluvial slopes of the Newberry and Dead Mountains, to a maximum height of 1,560' in the extreme northwest corner.... Numerous dry washes and channels dissect the alluvial materials on their way eastward to the Colorado River (BLM Environmental Statement, 1975:29) (See Topographic Map).

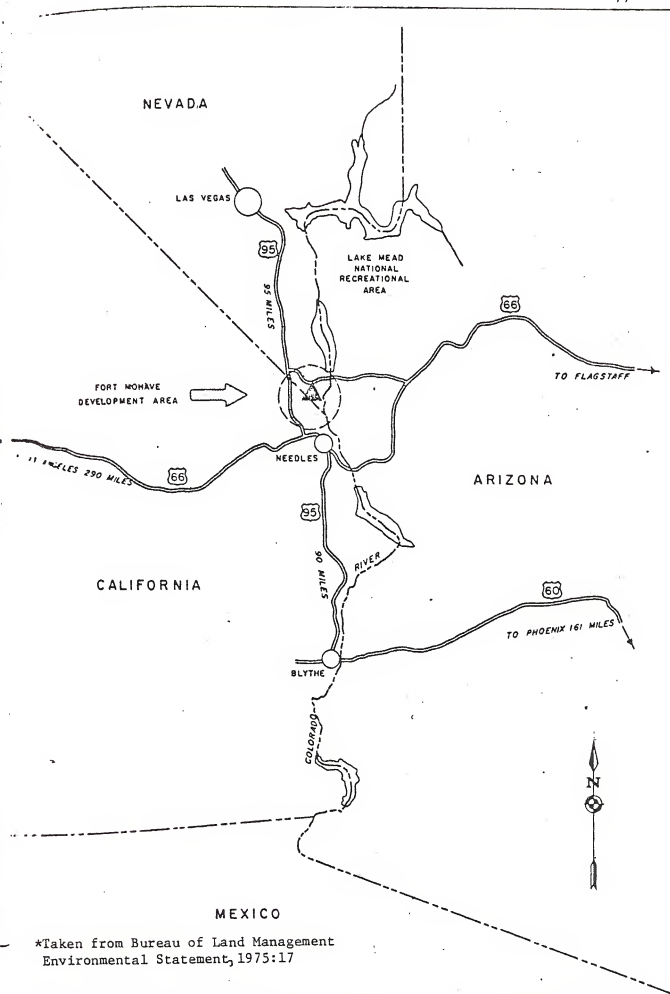
River terraces are another topographic aspect of the Fort Mojave terrain which relate closely to the archaeological survey. The lowest terrace lies between the 490' and 510' elevation and is in close proximity to the Colorado River. This terrace marks the beginning of the flood plain where it extends from the lowest river terrace to the 510' contour line where the second river terrace is located. The second river terrace continues to the 600' contour. The terrain between the lowest and the second river terrace consists of fine alluvial sands and loamy silts and is a relatively recent soil deposit. The second terrace is formed of cemented river gravels with surface substrates comprising a desert pavement. This terrace is being rapidly covered by alluvial wash from the higher fans and is heavily dissected along its eastern edge bordering the flood plain. Above the second terrace there are two ill-defined and one prominent ancient terrace formations which are remnants, partially buried in the alluvial fan overburden. The highest of these upper ancient terrace remnants appears as a distinctive landmark and all of these terrace remnants are readily identi-

fied in the topographic and the project maps. Approximate elevations for these ancient terraces are 540' to 580' for the lowest, the middle terrace remnants are at 600' to 680' and the highest and most prominent is at 800' to 880' elevation. The substrates on these terraces consist of gravel to cobble-sized materials composed mainly of crypto-crystallines and quartzites, heavily rolled and patinated. The surface is covered with the same types of materials which were utilized aboriginally as quarries for lithic workshop areas. These ancient terrace remnants represent the most important potential for archaeological site locales within this project area.

Above these ancient terraces the alluvial fan is heavily dissected by sheet erosion and contains no further evidence of exposed river terraces. There were no cobble substrates on the fan, where the major components consisted of granitic gravels.

LOCATION OF THE ARCHAEOLOGICAL SURVEY

The archaeological survey was conducted in the Fort Mojave area, located in the southernmost tip of Clark County, Nevada, on the west side of the Colorado River (see Location Map). Bullhead City and its southern extension, Big Bend, are situated on the east side of the Colorado River in Arizona. Big Bend is directly across from the project area. The Fort Mojave area can be reached either from Las Vegas via U.S. Highway 95, turning east on the Davis Dam Road, Nevada State Highway 77, or from Needles via a new paved road on the west side of the Colorado River that now connects with Nevada Highway 77. This road is designated as the PEW road on



the plastic overlays for the 7.5' series of topographic maps provided by the BLM. The PEW road bisects the project area.

The legal description of the entire Fort Mojave project area includes:

- (1) All of sections 1, 12, and 13 and fractional sections 24 and 25, township 33 south, range 65 east.
- (2) All of sections 6, 7, and 8, fractional sections 9, 10, and 15, east half, east half northwest quarter, and southwest quarter section 16, west half northeast quarter, west half, and southeast quarter fractional section 17, all of section 18, fractional sections 19, 20, 21, and 30, township 33 south, range 66 east (BLM Environmental Statement, 1975:1).

"Fractional" portions of a section mean that only a small piece of the section may not be included in the project area. These sections are located on U.S.G.S. topographic maps Mount Manchester, Nevada, California, and Arizona, 1970, 7.5 series, and Davis Dam Southeast, Arizona, Nevada, 1970, 7.5 series.

In the second phase of the inventory of the Fort Mojave area a less intensive or spot check survey was conducted in the unsurveyed units situated on the alluvial fan, which include the following (the section number is given first, with the quarter section number second, and each quarter section is considered a unit):

1-2, 1-3, 12-2, 12-3, 13-2, 13-3, 24-2, 24-3 and 25-2.

A more intensive survey was conducted in the following units:

9-3, 16-3, 8-2, 8-3, 17-2, 17-3, 20-3, 6-3, 7-2, 7-3, 18-2, 18-3, 19-2, 19-3, 30-2 and 30-3.

Areas excluded from the second phase of the inventory are the following units in the flood plain, covered with heavy vegetation:

9-2, 16-3, 21-3, 10-3, 15-2, 15-3, 22-2, and 22-3.

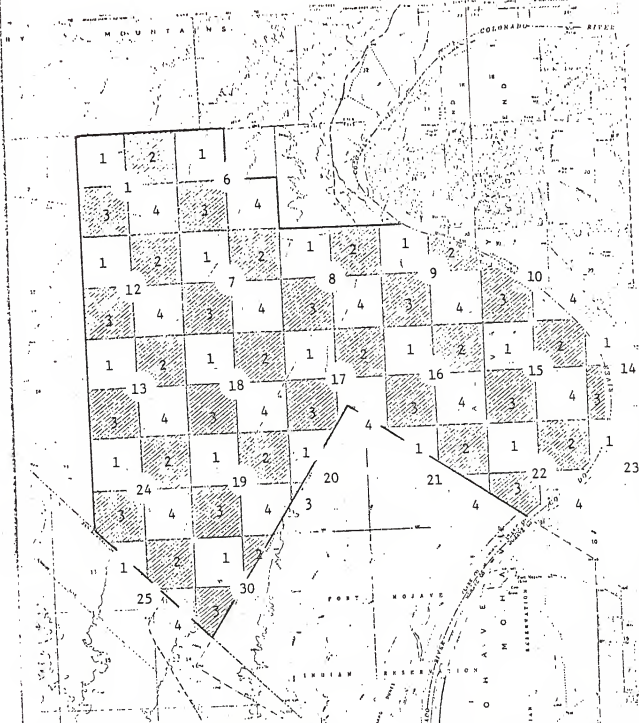
A limited survey of adjacent lands was to be done if any site extended beyond the boundaries of the Fort Mojave area, but none were encountered. A series of brief reconnaissances were made in

adjacent locales which appeared to have archaeological site potential, including the survey by the UNLV field class.

METHODOLOGY

During the first phase of the investigation of the Fort Mojave area knowledge of access roads, section markers, private land perimeters and other essential data had already been obtained. Consequently the second phase of this inventory project was facilitated by this information. The available roads include transmission line roads, gas line roads, paved roads, levee roads, mining roads and jeep trails, all of which were utilized during both phases of the survey. Private land is located in the NW corner of Section 16 and the NE corner of Section 17 and during the second survey, contact was made with the caretaker. The caretaker had lived in the region for some time, and he believed that an elderly couple named Cunningham, may have been buried in the historic cemetery, located on the private land. He had also heard that Indians may have been buried in this cemetery.

A systematic approach to the units less intensively surveyed was maintained through individual crew members walking zig-zag fashion within transects not larger than 50 meters in width. In those units that were being intensively surveyed, the field crew members walked parallel transects at 10 to 20 meter intervals. As in the first inventory, the banks of washes or arroyos and the ridges above them were closely examined during the survey. When archaeological sites or isolated finds were encountered concentric circles around each locale were walked to determine if there were additional materials, and to locate the perimeters of the site. In the few



CULTURAL RESOURCES ASSESSMENT AREA
 FORT MOJAVE - NEVADA

QUADRATS INVENTORIED
 FOR CULTURAL RESOURCES:

NE 1/2 (2) SW 1/2 (3)



FIELD METHODOLOGY MAP

Phase 2

NOTES:
 1. This map was prepared for the purpose of identifying cultural resources within the Fort Mojave Indian Reservation.
 2. The map shows the location of the Fort Mojave Indian Reservation and the Colorado River.
 3. The map also shows the location of the Fort Mojave Indian Reservation and the Colorado River.

instances where granitic boulders or small hills occurred within the survey units, these were checked for shelter sites and/or rock art manifestations.

The survey sample unit designation described in the first survey report is utilized in this second investigation. B.W. Hatoff, now with the Carson City District Office of the BLM, and D.O. Larson, now with the Ukiah District Office of the BLM, devised the unit designation in a consultation prior to the first phase of the field research. Section numbers are utilized as sample unit numbers and these are broken down into their four quarters; the northwest quarter being 1, the northeast quarter, 2, the southwest quarter, 3, and the southeast quarter 4. Each survey unit then can be designated as 12-1, 12-2, 12-3, or 12-4. During the first phase of the inventory all the northwest quarters and southeast quarters of the sections or portions of sections located in the project area were surveyed. In this second phase of the investigation all the northeast quarters and southwest quarters. On the field methodology map these are indicated as "12-2", "12-3", etc. The site discussions, descriptions, results and recommendations will utilize these unit designations for identification.

It was determined, as with the first survey, that should isolated lithic or sherdware be encountered, it would be collected, but that percussion or cobble materials would be left in situ. Following the contract performance description artifact collection also was limited to unique or possibly diagnostic artifacts.

ARCHAEOLOGICAL SITE DESCRIPTION

In order to quantify the site data generated by this project, the following format has been organized for the purpose of

archaeological site discussion; this material is presented for easy retrieval also in Table 1:

1. Permanent BLM Site Number (CR-NV-05-389)
2. Permanent NSM Site Number (26CK1407)
3. Survey Unit Number (1-3)
4. Elevation from mean sea level
5. Location: township, range, section, quarters of quarter sections
6. Site Type, including any of the following or combinations:
 - A. Lithic- Any site containing lithic artifactual materials, including lithic concentrations as well as large to small scatter area.
 - B. Lithic Quarry Workshops - Sites where rock cobbles and/or crypto-crystalline materials were quarried and prepared in the process of artifact manufacture.
 - C. Ceramic - A site at which one or more pottery sherds were found.
 - D. Historic - Any site at which historic debris such as tin cans, crockery, and house foundations are found.
 - E. Isolate - Usually a single artifact or small concentration with no association to a site area.
7. Area of Occupation: extent of surface coverage.
8. Map Number : project map.
9. Plates: plate number in regard to photographs utilized in the report.
10. Situation: includes geographic situation and site location.
11. Description: includes metric measurements and direction orientation.
12. Deposition: includes an estimation or speculation of possible subsurface materials.
13. Artifacts: includes any cultural materials that were recorded in association with the site.
14. Remarks: includes present physical situation of the site.

RESULTS OF SURVEY

The second phase of this investigation located in the Fort Mojave area involved basically two types of physiographic terrain. The Colorado River flood plain with its dense growths of vegetation, which was not surveyed in this second phase of the project, and the alluvial fan sloping from the Newberry and Dead Mountains towards the Colorado River valley, with a sparse vegetation cover. During the first phase of the Fort Mojave project in the Colorado River flood plain, which composed approximately one-third of the survey

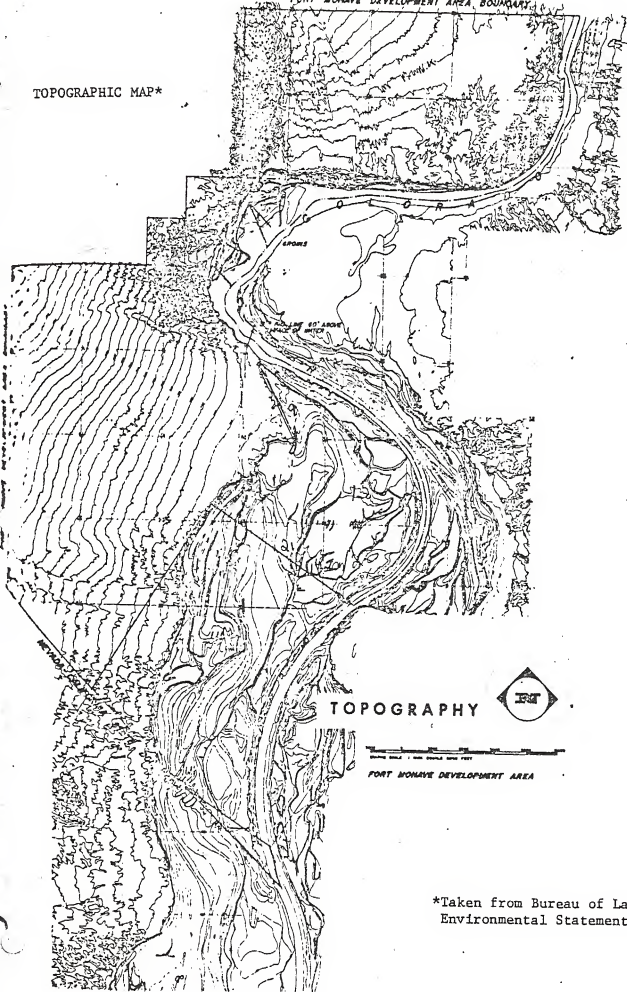
area, no archaeological sites or isolated finds were located. It was assumed that these negative data probably relate to the heavy brush and tree cover and the depositional overburden characteristic of the sections adjacent to the Colorado River. Even in the dune areas within the flood plain, which generally are considered potential archaeological site locales, there was a complete absence of archaeological materials. There are occasional open spaces in which sand dunes have collected and these were re-checked during the second phase of the inventory with negative results.

During the first phase of the investigation a number of historic and prehistoric sites were recorded on the second river terrace just above the flood plain. No additional sites or isolated finds were located along that terrace area in the second phase of the survey, with the exception of a single artifact encountered in a previously recorded site. In survey unit 9-4, BLM Site Number 401, which is a historic dump off the edge of the second terrace, a granitic slab metate, 16" long x 8" wide x 3" depth, was noted among the rusted can debris. This metate was not collected, but was recorded as an isolated aboriginal find in a historic site. At the time of the field work on the second phase of the survey, it was observed that many of the historic sites, especially the dump sites were not confined to the survey unit in which they had been recorded, but overlapped into the adjacent quarter sections.

In the upper portion of the alluvial fan, in the quarter sections that were to have a limited intensity survey two additional isolated finds of sherds were encountered. These were recorded and collected. In Unit 1-2 there were five sherds of the same

TOPOGRAPHIC MAP*

FORT MONAHVE DEVELOPMENT AREA BOUNDARY



TOPOGRAPHY



FORT MONAHVE DEVELOPMENT AREA

*Taken from Bureau of Land Management
Environmental Statement, 1975:21

type, two of which are rim sherds, and they were identified tentatively as Tizon Brown Ware. A single sherd, of Lower Colorado Buffware, was located in Unit 1-3, 30 feet south of the Bench Marker 1349. At the Bench Marker, itself, a single black basalt metate fragment was found, about 6" in diameter. It had been utilized to form the rock cairn around the Bench Marker. The metate fragment was recorded, but let in situ. These are the only artifact materials that were encountered during the second phase of the survey in the upper sections of the alluvial fan. Two U.S. Army unopened food ration cans were found, and related to manouvers held in this area about 10 to 20 years ago.

In Units 18-2 and 18-3 additional river terrace remnants were located. On these exposed ancient Colorado River terraces occurred quartzite and other crypto-crystalline cobbles. These cobbles showed evidence of percussion battering and the locales are considered quarry site areas, as described in the report for phase one of this inventory. In Units 19-3, 17-2 and 17-3 isolated cobble choppers were encountered. In Unit 17-3 a small workshop of battered cobbles was found within a 2 meter in diameter area. Since a representative sample of cobbles had been collected during the first phase of the investigation, all of these finds were left in situ, after they had been recorded.

SUMMARY

There are no known recorded National Register archaeological sites within the area specifically designated by the BLM for the Fort Mojave area under consideration in this second phase of the cultural resource inventory project.

In the second phase of the investigation of the Fort Mojave area for an inventory of cultural resources the results confirmed the first phase of the survey. On the upper alluvial fan, in the western portion of the survey area,

only a few additional pottery sherds and a single ground stone artifact fragment were encountered. In the mid-section between the high portion of the alluvial fan and the second river terrace two additional ancient river terrace remnants were located in alignment with the river terrace remnants recorded during the first of the survey. Both of these are further indicators of the use of these terrace remnants as potential quarry sources by the prehistoric inhabitants of the area. No additional sites were recorded on the second river terrace, which had been heavily utilized both historically and prehistorically. A metate was found in association with one of the previously recorded dump sites.

As discussed in the report on the first phase of this inventory of the Fort Mojave area the second river terrace, which is the lowest extension of the alluvial fan just above the flood plain, contained all the historic sites located during both phases of the survey. One of the most significant historic sites on the second terrace is the cemetery where it has been said that a couple named Cunningham were buried, and possibly two or more Indians.

During a one day reconnaissance of the historic trails in the project area with Stan Rolf, Las Vegas BLM District Office, Dennis Casebier and ARC staff, two historic surface artifacts were located adjacent to the dirt trail which represents the remnant of the Hardyville branch of the Mojave Trail. One was the base of a piece of thick crockery which resembled examples of historic beer crocks that Casebier had found in the Camp Cady area. This historic artifact was collected at a short distance from the east side of the road and within the project area. A mile west, and just outside the project area, a historic square bottle base was located, similar to a medicine bottle, also adjacent to the Hardyville branch of the Mojave Trail (see Brooks' letter, 12/20/77).

The prehistoric sites on the second terrace found during the first phase of the inventory consisted of lithic quarry workshops, lithic scatters and concentrations and some rock outline features. There were isolated finds of both ceramics and lithics recorded and collected. One isolated metate was recorded during the second phase of the survey. All the prehistoric sites appear to be surface sites, based on the examination of arroyo cuts through the second terrace and their situation on desert pavement.

During phase one of the survey the quarry areas that were encountered, were confined, for the most part, to the ancient exposed Colorado River terrace remnants (see Project Map BLM site numbers 413 to 423). In the second phase of the survey two additional terrace remnants, related to the same terrace exposure, were recorded and evidence of associated quarrying activities was observed. Lithic materials collected or observed during both phases of the Fort Mojave survey are characteristic of a percussion flake and tool technology. Lithic material consists mainly of large percussion flakes recovered from cobbles, randomly flaked cobbles and cobbles exhibiting minimal unifacial and bifacial flaking along edges formed by percussion. Microscopic utilization evidence, when present, was of battering. Quarry material consists of several varieties of quartz including chert, chalcedony, and quartzite. A few objects were made from porphyritic igneous material.

The flood plain east of the second terrace probably has no surface material older than forty years since historical records indicate a lateral shift of the river channel some 2,000 meters to the east, over most of the modern flood plain. The Colorado River channel as plotted by Swanholm in 1932 places it near and parallel to the present second terrace. The sediments on the surface of the present flood plain are probably the results of the deposition of a point-bar. Such sedimentary structures are deposited by the lateral

movement of a stream channel, which will cause erosion and cutting in the direction towards which the river is moving, while on the opposite bank deposition is occurring. Subsurface archaeological material should be found only in the older sedimentary sequences which lie below the modern deposition resulting from the point-bar in the Colorado River Valley Fort Mojave area between 1932 and the present. This might then be the explanation for the paucity of the sites in the flood plain here that Schroeder mentioned in his 1951 report, and possibly why no sites were encountered during the first inventory of the Fort Mojave area by the NAS, when an attempt was made to survey quadrats in the floodplain.

No culturally or chronologically diagnostic prehistoric lithic or ground stone artifacts were encountered in either phase of the Fort Mojave inventory project. The only prehistoric cultural material found, which could be considered diagnostic, was the sherd ware. The pottery sherds were mainly identified as Lower Colorado Buffware, some with a stucco finish. This ware was made by Yuman groups along the Lower Colorado River and Schroeder (1951) had dated it at pre-900 A.D. to post-1900 A.D. The other sherd ware represented in the ceramic finds is Tizon Brown Ware. This ware has been attributed to the Upland Arizona Yuman Indians by Dobyns and Euler (1958). They date Tizon Brown ware at about 700 A.D. to 1890 A.D.

Both phases of the Fort Mojave area project were essentially an inventory of cultural resources located within a delimited area in relatively close proximity to the Colorado River. Now that the inventory has been completed, historic and prehistoric sites recorded, the limited prehistoric artifacts catalogued or inventoried, there still remains one major archaeological problem. This concerns the highest ancient visible terrace remnants of the Colorado River in this area, on which are located prehistoric quarries. The

material in these sites is not readily identifiable, but it is obvious that an extended lithic technology occurred here, and the problem is to identify this technology and its significance in the prehistory or even ethno-history of this portion of the Colorado River. As recommended in the report on the first phase of the inventory this will necessitate a study oriented towards identifying the manufacturing techniques involved and isolating the elements of preparation and the use or non-use of cobbles. Similar quarry sites have not been encountered during previous surveys in this section of the Colorado River, neither those conducted by members of the ARC staff nor were they noted in the literature reviewed that related to this project area. The quarry sites recorded by Larson et al (1976) on the Arizona side of the River are not based on the quarrying and use of ancient river terrace cobble materials similar to those quarry sites in the project area.

It should also be stated that if Wheeler's 1869 map of Camp Mojave showing rancherias in the flood plain west of the Colorado River, did indeed refer to Mojave Indian settlements. Then on the basis of the subsequent sedimentary deposition, all of this ethno-historical material would now be buried in the present Colorado River sedimentary deposits or scattered by the frequent floodings that must have occurred prior to dam construction on the upper River. The ethnological information indicates that few encampments were occupied year round or could be considered permanent villages.

RECOMMENDATIONS

There is a continued debate in archaeology as to the significance of stone implements found on Colorado River terrace quarries. Their function and antiquity is still dubious as these quarries usually have no depth and no chronologically diagnostic materials. In some respects the problem is taphonomic and will necessitate detailed studies of the geological and geographical modifications of the landforms through time, to determine the associational interpretations of these modified river cobbles in the quarries. The cultural element of relating these cobble workshops to human activity is another source needing exploration. So little is known or has been studied in a concentrated locale where numerous quarry areas are located along the Colorado River, that resource studies related to their interpretation and ramifications could prove significant to the prehistory of this region. In this sense these quarry areas are unique as a study area in this section of the Colorado River, since they are, as yet, relatively undisturbed.

The historic sites recorded appear to have artifacts indicative of late 19th century and early 20th century, some being more recent. All the ethno-historical data and the early maps show Indian "rancherias" in the flood plain and the lower alluvial slopes of the subject area, although the river flooding, lateral shifting of the river channel, river dike construction, and associated vegetation have destroyed this evidence. It is probable that any proposed alteration of the present landscape involving excavation would exposed subsurface historic or prehistoric materials in the flood plain.

A number of questions regarding the physical integrity of the Mojave Trail, its associations, and its scenic significance were asked of Dennis Casebier during his consultation and he evaluated these in a letter of reply (12/17/77):

Another question that has been raised is whether or not the road presently retains its physical integrity---both inside and outside the

subject lands. A unique characteristic of this route of travel is that it exists across the Eastern Mojave Desert (in California and Nevada) today in very nearly the same condition it was in a hundred years ago. The reason for this is that when the Southern Pacific Railroad was built across the desert between Needles and Barstow (this is the line that is now the A.T.&S.F.R.R.) in the early 1880s the line used was displaced twenty miles or so to the south of the line of the Mojave Wagon Road. The reason for this was that the wagon road would climb steep hills and mountains to reach the few reliable springs of water. The railroad could not climb these mountains and didn't need to anyway---water supplies could be developed for the railroad or water could be hauled. Either of those alternatives was preferable to the massive work of road construction in mountains or climbing steep grades. Once the railroad was built wagon traffic and later auto traffic began to follow the railroad. The Mojave Road fell out of use. Consequently the modern highway across the desert (Interstate 40 between Barstow and Needles) evolved from the track of the Santa Fe Railroad instead of from the Mojave Road.

From Camp Cady (about twenty miles east of Barstow) eastward to the Fort Mojave crossing (a distance of 130 miles) the trace of the old wagon road passes through country largely unchanged since the old days. Some segments of it have continued to serve local traffic needs, but for the most part it is quite isolated and has been abandoned for a long time.

Throughout most of this 130 miles the road is on public land administered by the Bureau of Land Management. About 115 miles are in California and the last 15 or so before you reach the river are in Nevada.

Another question...is to comment on feelings about what might be called the scenic integrity of the Mojave Road as it exists today. The interest is to determine whether or not it has the same 'feel' about it that it might have had a hundred years ago. The concern is that the works of man might have intruded upon the scenic quality of the region to the extent that it has lost its original character. The bluff upon which Fort Mojave was situated is visible for many miles and the greenery and windings of the Colorado are visible as soon as you cross the ridge north of the Dead Mountains....

There is no question but that, to some extent, the works of man have intruded upon the feel and appearance of the country through which the trail passes. Mostly this is in the form of utility lines and corridors and fences and modern roads. Of course it is well known that utility corridors in the form of power transmission lines, gas lines, underground communication lines, and others have been built helter-skelter all over the desert. It is clear that adequate consideration has not been given to the impact of these lines on the scenic resources of the desert. There isn't hardly any corner of the desert that has escaped these intrusions upon the scenic quality.

Intensive development will unquestionably negate the remaining scenic values associated with the Mojave Trail in the entire region east of the Dead/Newberry Mountains....the negative effects go much farther than

just in the Mojave Valley. The preservation of the Fort Mojave crossing---and the approaches leading to it---is vital to successful preservation and use of the entire trail. The Mojave crossing is the heart of the matter in many ways and if that is lost then the whole will be greatly weakened.

The highlights of the historical resources of this region should not be overlooked. As mentioned earlier, Fort Mojave was one of the most important crossings of the Colorado River in the years before bridges and dams. It is the only important crossing of the Colorado still in isolated and in nearly original condition. The others are either inundated by lakes or else cities have grown up around them. Certainly it is the only such crossing available to the people of Nevada. So the general area is of the greatest historical importance as one of the great river crossing points. It would be an ideal location for the difficulties of early river crossings to be interpreted and where visitors could be made more fully aware of the great changes that have taken place in the valley of the Colorado since the building of the dams.

On the basis of the prehistoric and historic materials recorded in the project area any proposed developments would constitute an adverse effect on one or more of the identified cultural resource values that relate to criteria established by 36 CFR 800.9. Virtually any development or alteration of these lands, that is not oriented towards preserving or conserving the identified values would probably result in "...destruction or alteration of all or part of a property" (36 CFR 800.9,a); "its surrounding environment" (36CFR 800.9,b); "introduction of visual, audible, or atmospheric elements that are out of the character with the property or alter its setting" (36 CFR 800.9,c); and possibly "neglect of a property resulting in its deterioration or destruction" (36 CFR 800.9,e).

The sections of the federal law (36 CFR 800.9) quoted in the preceding paragraph apply particularly to the historic materials encountered during the cultural inventory of the Fort Mojave project area, The Mojave Trail was traced through these lands during the inventory, and the historic sites recorded in the first phase of the inventory on the second terrace, will need positive action to preserve their integrity. The prehistoric sites are visible and of

a fragil nature and must be included in any protective measures for the area.

To insure that compliance with the federal laws occurred, and that as much informations as possible relating to the historic and prehistoric materials encountered during this inventory be given to the Nevada State BLM Office, copies of the first phase and the preliminary second phase report were sent to the tribal council chairmen of the Colorado River Indian Tribes at Parker, Arizona, and the Fort Mojave Indian Tribe at Needles, California. Both chairmen were requested to telephone the Nevada State BLM Office to make any comments or give any information they or members of their reservations had with regard to these project lands.

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CR-NV-05-430

Site Type: Isolated Ceramic

Area of Occupation: 2 meter diameter

Survey Unit: 1-2

Map: Project Map

Elevation: 1410'±

Plate: See Phase 1 Report, Overview 4

Location: T.33S., R.65E., Sec. 1, NW¼ of NE¼

Situation: On alluvial fan sloping from foothills towards Colorado River.

Description: Scatter of pottery sherds, possibly Tizon Brown Ware

Deposition: Surface

Artifacts: Ceramic ware

Remarks: Normal erosion, no surface disturbance.

CR-NV-05-431Site Type: Isolated Ceramic, Isolated
Metate Fragment

Area of Occupation: 2 meter diameter

Survey Unit: 1-3

Map: Project Map

Elevation: 1349'±

Plate: --

Location: T.33S., R.65E., Sec. 1, SE¼ of SW¼

Situation: On alluvial fan sloping from foothills towards Colorado River.

Description: Single sherd of possibly Lower Colorado Buffware; basalt
metate fragment

Deposition: Surface

Artifacts: Ceramic sherd, metate fragment

Remarks: Normal erosion, no surface disturbance. Metate found in the
cairn around a bench marker, elevation 1349.

CR-NV-05-432

Site Type: Lithic Quarry Workshop

26CK1425

Area of Occupation: Limits 30 x 30 meters

Survey Unit: 18-2

Map: Project Map

Elevation: 840'±

Plate: See Phase 1 Report, Overview 2

Location: T.33S., R.65E., Sec. 18, NW¼ of NE¼

Situation: Site is situated on an exposed remnant of ancient terrace of the Colorado River, approximately 200'-250' above the present channel level and is adjacent to Site CR-NV-05-420.

Deposition: Surface

Artifacts: Cores, hammerstones and waste flakes were observed.

Remarks: Normal erosion, no heavy disturbance; needs further study.

CR-NV-05-433

Site Type: Lithic Quarry Workshop

26CK1426

Area of Occupation: 35 x 85 meters

Survey Unit: 18-3

Map: Project Map

Elevation: 770'±

Plate: See Phase 1 Report, Overview 2,
for general area.

Location: T.33S., R.65E., Sec. 18, NE¼ of SW¼

Situation: 70 meters south of jeep trail and 50 meters to the west of Site CR-NV-05-421.

Description: Probable quarry workshop, broken cobbles and hammerstones associated with waste flakes.

Deposition: Surface

Artifacts: Core tools as hammerstones and waste flakes.

Remarks: No disturbance; needs additional study.

CR-NV-05-434

Site Type: Lithic Quarry Workshop

26CK1427

Area of Occupation: Indeterminate

Survey Unit: 19-2

Map: Project Map

Elevation: 770'±

Plate: See Phase I Report, Overview 2,
for general area.

Location: T.33S., R.65E., Sec. 19, NW¼ of SE¼

Situation: Series of ridges just south of PEW road, and 1½ miles
northeast of San Bernardino County line.Description: A series of three ridges with a cobble outwash from higher
ancient river terraces; cobbles have been utilized as a quarry area,
with long wide washes between the ridges.

Deposition: Surface

Artifacts: Hammerstones, uniface and biface choppers observed.

Remarks: There is recent cutting on the ridge area in the softer soil
cover. A single tank track cuts across one ridge, causing additional
erosion. Area will need additional study.CR-NV-05-435

Site Type: Lithic

26CK1428

Area of Occupation: 10 meter diameter

Survey Unit: 17-2

Map: Project Map

Elevation: 450'±

Plate: See Phase I Report, Overview 2,
for general area.

Location: T.33S., R.65E., Sec. 17, SW¼ of NE¼

Situation: Area is ½ mile south of jeep road and just on edge of private
property, and is approximately ½ mile south of PEW road.Description: A small concentration of unmodified and modified cobbles,
probably as outwash from the higher river terraces.

Deposition: Surface

Artifacts: Uniface and biface choppers and hammerstones were observed.

Remarks: Erosion is minimal; area needs additional study.

CR-NV-05-436

Site Type: Lithic

26CK1429

Area of Occupation: 2 meters diameter

Survey Unit: 17-3

Plate: See Phase I Report, Overview2,
for general area.

Elevation: 580'±

Map: Project Map

Location: T.33S., R.65E., Sec. 17, NW¼ of SW¼

Situation: 20 meters south of jeep trail and approximately 1/8 mile
south of PEW road.Description: Small concentration of 9-12 modified cobbles in workshop
area. Material appears to have been carried to this locale as
there is no quarry material in immediate vicinity.

Deposition: Surface

Artifacts: 3 well-defined hammerstones, 4 uniface and 3 biface choppers,
and several cores were observed.

Remarks: No disturbance

CR-NV-05-437

Site Type: House Circle

26CK1430

Area of Occupation: 1½ meter diameter

Survey Unit: 19-3

Map: Project Map

Elevation: 775'±

Plate: --

Location: T.33S., R.65E., Sec. 19, SW¼ of SW¼

Situation: 20 meters south of where power line road crosses a major
arroyo; jeep trail cuts west up arroyo from PEW road. Site is on the
west side of arroyo; power line road on east side of arroyo has been
washed out by a storm and water flowing into the arroyo.Description: Small house circle outlined by rock, no central depression
and no cultural material was found in area.

Deposition: Surface

Artifacts: None

Remarks: No other house circles were noted along the arroyo banks.

26CK # BLM Site #	Survey Unit	Legal Map Ref. Elev.	Area of Occ.	Archaeological Site Complex	Map # Photo	Remarks
26CK1429 CR-NV-05-436	17-3	T. 33S., R. 65E., Sec. 1 NW $\frac{1}{4}$ of NE $\frac{1}{4}$ 1410 \pm	2 m. dia.	Isolated ceramic	Project	No surface disturbance
26CK1428 CR-NV-05-435	17-2	T. 33S., R. 65E., Sec. 1 NW $\frac{1}{4}$ of NE $\frac{1}{4}$ 840 \pm	30 x 30 m.	Lithic quarry workshop	Project	No heavy disturbance; needs further study
26CK1427 CR-NV-05-434	19-2	T. 33S., R. 65E., Sec. 1 NW $\frac{1}{4}$ of SE $\frac{1}{4}$ 770 \pm	Indeterminate	Lithic quarry workshop	Project	Recent erosional cutting; Area will need further study
26CK1426 CR-NV-05-433	18-3	T. 33S., R. 65E., Sec. 18 NE $\frac{1}{4}$ of SW $\frac{1}{4}$ 770 \pm	35 x 85 m.	Lithic quarry workshop	Project	No disturbance; needs further study
26CK1420 CR-NV-05-437	19-3	T. 33S., R. 65E., Sec. 19 SW $\frac{1}{4}$ of SW $\frac{1}{4}$ 775 \pm	1 $\frac{1}{2}$ m. dia.	House circle	Project	No other house circles noted along the arroyo banks

THE MOJAVE TRAIL: AN HISTORICAL BACKGROUND

Compiled by

Phillip I. Earl, Nevada Historical Society

November 14, 1977

The Mojave Trail between Fort Mojave on the Colorado and Fort Pah-Ute in California apparently traverses some natural passes inasmuch as it was an Indian trail long before the coming of the white man. The Spanish explorer, Francisco Garces, probably passed along parts of the trail in 1776 in his search for a route from New Mexico to Spanish California. Reports on subsequent use by Spanish and later Mexican explorers and traders are inadequate and spotty, but it is likely that the route was in periodic use, although never a major route due to Indian problems in the area. The Sonora Route to the south was preferred by those making their way west because of fewer Indian problems and more easily-traversed terrain. After 1825, the early years of the Mexican period, this latter route was used extensively.

The first Americans known to have made use of the Mojave Trail was fur and trapper and mountain man Jedediah Strong Smith of the Rocky Mountain Fur Company. Exploring and trapping on the Colorado River in the late summer and early fall of 1826, he led a party west from the river to San Gabriel in Mexican California in September of that year. Smith returned east on the trail in February of 1827, but cut off to the north before he reached the section we are concerned with. Canadian trappers under the leadership of Peter Skene Ogden of the Hudson Bay Company made use of the Mojave Trail in 1829, as did Ewing Young and Kit Carson in the fall of that year. Another trapper, Richard Campbell, traveled the trail in 1830 and Thomas "Peg Leg" Smith was probably on the trail at this time also.

The opening of the Old Spanish Trail to the north in 1830 lessened travel

on the routes to the south. The Old Spanish Trail was also the primary route for Americans coming west during the California Gold Rush after 1849, although some travel on the Mojave Trail probably continued throughout the 1840's and 1850's. The Old Spanish Trail had distinct advantages over those to the south, the foremost being more springs and sources of water and less trouble with the Indians.

In the early 1850's, the United States began surveys of the West looking toward the construction of a trans-continental railroad. In March of 1854, a survey party under the leadership of Lieutenant Amiel Whipple of the U.S. Army Topographical Corps reached the Colorado River from the east and were led over the Mohave Trail by an Indian guide. The trail was surveyed and suggested as a practical railroad route, but further appropriations to develop the route were not forthcoming for another three years.

In 1857, the War Department got an appropriation to construct a wagon road from Fort Defiance, New Mexico Territory, across what is today northern Arizona and southern California. Edward Fitzgerald Beale, a former naval officer, was put in charge of this project and in 1858 and 1859, he followed up on the previous explorations of Lieutenant Whipple. A practical wagon route was laid out at that time by Beale and his party.

Beale's route was the object of considerable publicity and various California-bound traders and immigrant parties began to make use of it. The U.S. Postal Department established a mail route on the Mojave Trail in 1858, but abandoned it by mid-1859 because of troubles with the Indians. Immigrant parties were also experiencing trouble with Mojaves and in April of 1859, Fort Mojave was established on the east bank of the Colorado River at Beale's Crossing, the eastern anchor of the Mojave Trail. Fort Mojave continued to function until May of 1861 and troopers from the fort patrolled the trail to

the west. There was considerable military and civilian traffic on the trail during this period because it was the only route from California into the area of what is today northwestern Arizona. Considerable exploration for mineral wealth was underway in this area in the late 'Fifties and early 'Sixties and in 1862, the El Dorado Canyon District was opened up. Although river steamers had begun to haul most of the supplies and passengers destined for the northwestern Arizona by the early 1860's, the Mojave Trail was still heavily used. In 1864, Prescott became the capital of the Arizona Territory and there was much traffic on the trail from that place to southern California in subsequent years.

Fort Mojave had been re-activated in May of 1863 and cavalrymen once again took up patrols of the Mojave Trail. Patrols operating out of Camp Whipple at Prescott also worked the trail and in November of 1867, an outpost was established at Pah-Ute Springs, twenty-five miles to the west of Fort Mojave on the Mojave Trail. Several outposts were established along the trail in the spring of 1868 and were subsequently occupied by cavalrymen operating out of Fort Mojave, Camp Prescott and California military installations, although Pah-Ute itself was abandoned in April of 1868.

As river traffic became heavier in the 1870's, travel on the Mojave Trail fell off and its condition deteriorated. Appeals to Congress for funds to maintain the trail were unheeded and it was all but abandoned. In the 1890's, Pah-Ute Springs became a popular picnicing and swimming spot for the people of Needles, California and after the introduction of the automobile about 1906, these vehicles traversed the Mojave Trail on recreational excursions for several years.

As to historic remains and artifacts on the stretch of trail between the west bank of the Colorado River and Pah-Ute Springs (or Pah-Ute Creek as it

appears on some maps), it seems that there might be found the remains of temporary military outposts, supply caches and camps established by traders and immigrant parties. Cattle and sheep have also been driven over the Mojave trail from time to time and the remains of corrals or temporary enclosures are also a possibility. Some farming has been attempted in the Pah-Ute Springs area and there was a turkey farm there in the 1950's. Military buttons, guns, sabers, pieces of military harness, parts of wagons and other such materials would very likely be found along the trail as well. The last time this writer was over the trail in the early 1960's, it was in extremely bad condition.

As to the maps I have enclosed, in Township 33 South, Range 65 East, the road crosses the southeast quarter of Section 12, the southwest tip of the northeast quarter of this section and cuts diagonally across the northwest quarter into Section 11. In this section, it crosses the northeast tip of the southeast quarter before passing into Section 2. In this section, the road cuts across the southwest tip of the southeast quarter and the center of the southwest quarter. The road to Hardyville cuts off to the northeast in this latter quarter. Hardyville was established as a port on the Colorado River in 1864, the date of the road also. From Section 2, the road crosses Section 3 at the north edge of the southeast quarter, cuts across the southwest tip of the northeast quarter and crosses the northwest quarter at a slight northwest angle. The road crosses the next section, Section 4, slightly to the north center portion of the northeast quarter and cuts across the northeast tip of the northwest quarter before moving into Township 32 South, Range 65 East. It enters Section 33 at the southwest tip of the southwest quarter and enters Section 32 in the southeast quarter. Angling north, it crosses the northeast quarter of Section 32 and enters Section 29 at the southwest corner of the southeast section. Crossing the southwest quarter of Section

29 at a northwest angle and cutting across the southwest tip of the northwest quarter before entering Section 30 across the center of the northeast quarter, the road angles north across the southwest tip of the southeast quarter of Section 19, angles north across the northeast tip of the southwest quarter of this section and enters the northwest quarter. In this latter quarter, the road angles to the west and enters California.

The two maps from which this data was taken date from surveys completed in 1882 and the section designations are different from those on the current Davis Dam Quadrangle. I have copied and enclosed the old maps and have also copied a section of the Davis Dam Quadrangle on which I have sketched the location of the old Mojave Road as nearly as I can determine it from the maps and my research.

Old survey maps for Section 7, Section 18 and Section 17 on the Davis Dam Quadrangle do not exist, at least not at the Bureau of Land Management office in Reno, so you might begin where the old maps I have enclosed start in Section 12 and work your way east through the southwest corner of the southwest quarter of Section 7, the northeast corner of the northeast quarter of Section 18 and follow it through Section 17 on to the Indian Reservation. As I mentioned on the telephone, Dennis G. Casebier is the authority on the history of the Mojave Trail. His book, The Mojave Road (Norco, California: Tales of the Mojave Road Publishing Company, P.O. Box 307, Norco, California, 91760), is the most complete study of the subject to date. Gary Roberts at our Southern Nevada Office would have his address. If the nature of your project were explained to him, I am sure that he could help.

As to information on the history of the Mojave Trail and adjacent areas in the Twentieth Century, it would be partly a matter of digging it out of the newspapers in the Las Vegas area and in Kingman, Arizona and in Needles, California.

Maps, deeds, land titles, ranching and agricultural information would be available in the records at the Assessor's Office and at the County Recorder's office in Las Vegas. The newspaper research would take a considerable amount of time, but the other research might well be right at hand. If I were approaching this, I would go to the county records first and then follow up with research in the newspapers.

The tank tracks you have been finding are of World War II vintage when General George Patton conducted military exercises throughout southern California and in this area of southern Nevada. His headquarters was at Camp Baker near Barstow, California, but training was conducted in several desert areas.

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BORROWER'S CARD

ojave cultural resource inventory,
ecological/historical field investi-
n Southern Clark County, Nevada.

BORROWER	OFFICE	DATE RETURNED

Form 1279-3 (May 1982) (formerly DSC 1279-3a)

BIBLIOGRAPHICAL NOTE

All of the following works are general in nature on the Mojave Trail and its history. All are footnoted, however, for the reader who wants to look at primary material and other secondary sources.

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